

MilestoneTM
PHARMACEUTICALS

2023 Annual Report

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2023

OR

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

For the transition period from _____ to _____

Commission file number 001-38899

Milestone Pharmaceuticals Inc.

(Exact name of registrant as specified in its charter)

Québec

(State or Other Jurisdiction of Incorporation or Organization)

Not applicable

(I.R.S. Employer Identification No.)

1111 Dr. Frederik-Phillips Boulevard, Suite 420

Montréal, Québec CA

(Address of Principal Executive Offices)

H4M 2X6

(Zip Code)

Registrant's telephone number, including area code (514)-336-0444

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares	MIST	The Nasdaq Stock Market LLC

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 electronically, if any, every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes No

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

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

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

The aggregate market value (approximate) of the registrant's common equity held by non-affiliates based on the closing price of a share of the registrant's common share for The Nasdaq Stock Market on June 30, 2023 (the last business day of the registrant's most recently completed second fiscal quarter) was \$95.9 million.

As of March 21st, 2024, the total number of shares outstanding of the registrant's Common Shares was 53,149,778 shares, net of treasury shares.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the registrant's definitive proxy statement for the registrant's 2024 annual meeting of stockholders, to be filed within 120 days after the close of the registrant's fiscal year, are incorporated by reference into Part III of this Annual Report.

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This Annual Report on Form 10-K contains references to United States dollars and Canadian dollars. All dollar amounts referenced, unless otherwise indicated, are expressed in United States dollars. References to “\$” are to United States dollars and references to “C\$” are to Canadian dollars.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this Annual Report on Form 10-K, including statements regarding our strategy, future financial condition, future operations, projected costs, prospects, plans, objectives of management and expected market growth, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "design," "due," "estimate," "expect," "goal," "intend," "may," "objective," "plan," "predict," "positioned," "potential," "seek," "should," "target," "will," "would" and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology.

We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of known and unknown risks, uncertainties and assumptions, including risks described in the section titled "Risk Factors" and elsewhere in this Annual Report on Form 10-K, regarding, among other things:

- the initiation, timing, progress and results of our current and future clinical trials of etripamil, including our Phase 3 clinical trials of etripamil for the treatment of paroxysmal supraventricular tachycardia, our Phase 2 clinical trial of etripamil for the treatment of atrial fibrillation and rapid ventricular rate, and of our research and development programs;
- our ability to develop and, if approved by regulatory authorities, commercialize etripamil in China, Hong Kong, Macau and Taiwan through our license agreement with Ji Xing Pharmaceuticals;
- our plans to develop and commercialize etripamil and any future product candidates;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our ability to establish collaborations or obtain additional funding;
- our ability to obtain regulatory approval of our current and future product candidates;
- our expectations regarding the potential market size and the rate and degree of market acceptance of etripamil and any future product candidates;
- our ability to fund our working capital requirements and expectations regarding the sufficiency of our capital resources;
- the implementation of our business model and strategic plans for our business, etripamil and any future product candidates;
- our intellectual property position and the duration of our patent rights;

- developments or disputes concerning our intellectual property or other proprietary rights;
- our expectations regarding government and third-party payor coverage and reimbursement;
- our ability to compete in the markets we serve;
- the impact of government laws and regulations;
- developments relating to our competitors and our industry; and
- the factors that may impact our financial results.

The foregoing list of risks is not exhaustive. Other sections of this Annual Report on Form 10-K may include additional factors that could harm our business and financial performance. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time, and it is not possible for our management to predict all risk factors nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements.

In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. Although we believe that we have a reasonable basis for each forward-looking statement contained in this Annual Report on Form 10-K, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur at all. You should refer to the section titled "Risk Factors" for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. Except as required by law, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. The Private Securities Litigation Reform Act of 1995 and Section 27A of the Securities Act of 1933, as amended, or the Securities Act, do not protect any forward-looking statements that we make in connection with this Annual Report on Form 10-K.

SUMMARY OF RISK FACTORS

Our business is subject to numerous risks and uncertainties, including those described in Item 1A “*Risk Factors*”. These risks include, but are not limited to the following:

- We have incurred significant operating losses since inception and anticipate that we will continue to incur substantial operating losses for the foreseeable future and may never achieve or maintain profitability.
- We will require substantial additional funding to finance our operations. If we are unable to raise capital when needed, we could be forced to delay, reduce or terminate our development of etripamil or other operations.
- Raising additional capital may cause dilution to our shareholders, restrict our operations or require us to relinquish rights to our product candidates.
- Economic uncertainty, including related to inflation, may adversely affect our results of operations.
- We have only one product candidate, etripamil, for which we are currently pursuing clinical development. Our future success is substantially dependent on the successful clinical development and regulatory approval of etripamil. If we are not able to obtain required regulatory approvals for etripamil or any future product candidates, we will not be able to commercialize etripamil or any future product candidates and our ability to generate revenue will be adversely affected.
- We may not be successful in our efforts to expand our pipeline of product candidates beyond etripamil for paroxysmal supraventricular tachycardia.
- The development of additional product candidates is risky and uncertain.
- Success in preclinical studies or earlier clinical trials may not be indicative of results in future clinical trials and we cannot assure you that any ongoing, planned or future clinical trials will lead to results sufficient for the necessary regulatory approvals.
- Our business, operations and clinical development timelines and plans have been adversely affected by the effects of health epidemics, and could be affected by future health epidemics.
- We may encounter substantial delays or difficulties in our clinical trials.
- Enrollment and retention of patients in clinical trials is an expensive and time-consuming process and could be delayed, made more difficult or rendered impossible by multiple factors outside our control.
- If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell etripamil or any future product candidates, we may not be successful in commercializing etripamil or any future product candidates, if and when they are approved.
- Even if etripamil or any future product candidates receive marketing approval, they may fail to achieve market acceptance by physicians, patients, third-party payors or others in the medical community necessary for commercial success.
- Even if we successfully obtain approval for etripamil, its success will be dependent on its use in accordance with labeled instructions for use.
- If the market opportunities for etripamil and any future product candidates are smaller than we estimate, our business may suffer.
- Coverage and adequate reimbursement may not be available for etripamil or any future product candidates, which could make it difficult for us to gain market acceptance.
- Even if we obtain and maintain approval for etripamil or any future product candidates from the Food and Drug Administration, or FDA, we may never obtain approval of etripamil or any future product candidates outside of the United States, which would limit our market opportunities and could harm our business.
- Even if we obtain regulatory approval for etripamil or any future product candidates, they will remain subject to ongoing regulatory oversight.
- We will rely on third parties to produce clinical and commercial supplies of etripamil and any future product candidates.
- We rely on third parties to conduct, supervise and monitor our preclinical studies and clinical trials, and if those third parties perform in an unsatisfactory manner, it may harm our business.
- Etripamil is intended to be used with a nasal spray device, which may result in additional regulatory and supply risks.

- If we are unable to obtain and maintain patent protection for etripamil or any future product candidates, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize drugs similar or identical to ours, and our ability to successfully commercialize our product candidates may be impaired.
- Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.
- The market price of our common shares has been and may continue to be volatile and fluctuate substantially, and you could lose all or part of your investment.
- Our common shares are thinly traded and our shareholders may be unable to sell their shares quickly or at market price.
- Concentration of ownership of our common shares among our existing executive officers, directors and principal shareholders may prevent new investors from influencing significant corporate decisions.

PART I

ITEM 1. BUSINESS

Company Overview

We are a biopharmaceutical company focused on the development and commercialization of innovative cardiovascular medicines. Our lead product candidate etripamil is a novel and potent calcium channel blocker that we designed as a rapid-onset nasal spray to be self-administered by patients. We are developing etripamil for the treatment of specific heart arrhythmias with a lead indication to treat paroxysmal supraventricular tachycardia, or PSVT, and a subsequent indication to treat atrial fibrillation with rapid ventricular rate, or AFib-RVR.

PSVT is a condition that causes a patient's heart to suddenly start beating faster than normal. It can be life-altering as PSVT is highly symptomatic, characterized by unpredictable attacks of a racing heart, often exceeding 150 beats per minute. Symptoms of PSVT arise suddenly and may include palpitations, sweating, chest pressure or pain, shortness of breath, sudden onset of fatigue, lightheadedness or dizziness, fainting, and anxiety, causing many patients to interrupt their daily activities at the time of symptom-onset. The impact and morbidity from an episode of PSVT can be especially detrimental in patients with underlying cardiovascular or medical conditions, such as heart failure, obstructive coronary disease, or dehydration. The uncertainty of when such an attack of PSVT will strike or how long it will persist is often anxiety-provoking, reduces patients' quality of life and prevents participation in many desired activities. Drugs approved for the treatment of PSVT attacks include adenosine, verapamil, and diltiazem, with all being administered intravenously under medical supervision, usually in the emergency department. Other oral drugs are sometimes used to treat attacks in a concept called "pill in the pocket." However, those drugs have never been proven effective or safe and are not approved for this use. Doctors are frustrated by the lack of effective treatment options besides a prolonged, unpleasant, and costly trip to the emergency department or, for some patients, an invasive ablation procedure. PSVT is traumatic for patients, frustrating for healthcare providers, and costly for payors. With no pharmaceutical innovation in the treatment of PSVT for more than 30 years and a movement in the healthcare system to enable patient centered care, there is an opportunity to help patients living with PSVT to take greater control over their PSVT attacks.

Atrial Fibrillation, or AFib, is a common form of arrhythmia with an irregular and often rapid heart rate that is often markedly symptomatic and, without proper treatment, can increase the risk of stroke, heart failure, and other cardiovascular complications. A common complication of AFib is a rapid ventricular rate, or AFib-RVR, which is frequently defined as a heart rate ≥ 110 beats per minute. The occurrence of a rapid ventricular rate in patients with atrial fibrillation increases the likelihood of marked symptoms including heart palpitations, shortness of breath and weakness. There are two commonly used pharmacological approaches to chronically manage AFib, rhythm control and rate control. Regardless of the chronic approach, when faced with a sudden episode of AFib-RVR, acute rate control is needed, and most treatments are oral AV-nodal targeted drugs such as a beta blocker or calcium channel blockers. However, these oral rate control drugs, when used acutely, do not adequately provide immediate or adequate ventricular rate control due to a 30- to 90-minute delayed onset of action, and, as a result, many patients need faster and more certain rate-reduction and symptom-resolution and so seek acute-medical care by going to the emergency department for treatment utilizing intravenous rate control and/or electrical cardioversion of their atrial fibrillation. Similar to PSVT, patients feel a loss of control by needing to visit the emergency department for overcoming their atrial fibrillation attack and the unpredictable nature of RVR episodes; doctors are frustrated by the lack of options for patients to self-manage these acute rate attacks; and payor organizations would prefer to treat the AFib-RVR attacks in a more cost effective and time-efficient manner.

Our objective is to develop and commercialize etripamil as a fast-acting, portable nasal spray treatment to be prescribed by a physician or appropriate health-care professional such that the patient with the indicated arrhythmia can carry etripamil with them for use wherever and whenever an attack of the arrhythmia occurs. If approved, we believe that etripamil will provide the patient with a portable treatment to stop an attack at-home and to reduce the reliance on the emergency department. We believe that this may help patients to live their lives with less concern over when their next PSVT attack will occur. For health care providers, etripamil could represent a new tool they can offer to their patients to better self-manage their PSVT attacks resulting in fewer calls to their office, a more efficient use of healthcare resources, and more empowered, satisfied patients.

Our recently completed and reported data from a Phase 2 clinical trial for assessing the safety and effectiveness of etripamil in AFib-RVR. Similar to our approach for PSVT, we believe that etripamil has the potential to help the patient experiencing a symptomatic episode of AFib-RVR to self-manage their condition by conveniently, reliably and quickly reducing their elevated heart rate wherever and whenever the episode occurs, thereby reducing the need for emergency department utilization that many patients currently seek. On November 11, 2023, we announced and publicly presented positive Phase 2 data reflecting that patients with AFib-RVR receiving etripamil nasal spray experienced rapid and statistically superior ventricular rate reduction and improved symptom-relief compared to placebo. Safety and tolerability reported in the 56-patient safety population who received etripamil was generally consistent with that observed in our PSVT program discussed above. We believe these data support the further development of self-administered etripamil for the treatment of AFib-RVR and are in dialogue with FDA concerning Phase 3 development for this indication.

We believe that PSVT is a large and under-recognized market that we estimate affects approximately two million Americans and results in over 150,000 emergency department visits and hospital admissions and up to 80,000 ablations per year. From this diagnosed population, we define the target addressable market for etripamil as 40% to 60% of patients who experience frequent and longer, moderate to severe episodes each year. After being exposed to the data from the RAPID clinical study in market research, Cardiologists reported a willingness to prescribe etripamil to approximately 50% of the patients with PSVT in their care, which suggests 500,000 to 800,000 patients can potentially be treated with etripamil in the peak year. Additionally, we believe that these target patients will use etripamil to treat a median of five episodes per year based on the projected number of longer or more intense episodes (self-reported) experienced by the patient. This implies demand in the US for etripamil of 2.5 million to 4 million episodes treated in the peak year.

An estimated five million Americans suffer from AFib. The incidence of AFib is expected to grow to approximately 10 million by 2025 and up to about 12 million by 2030. A subset of patients with AFib experience episodes of abnormally high heart rate most often accompanied by palpitations, shortness of breath, dizziness, and weakness. While these episodes, known as AFib-RVR, may be treated by oral calcium channel blockers and/or beta blockers, patients frequently seek acute care in the emergency department to address symptoms. In 2016, nearly 800,000 patients were admitted to the emergency department due to AFib symptoms. Treatment for such symptoms typically includes medically supervised intravenous administration of calcium channel blockers or beta blockers, or electrical cardioversion. With little available data for AFib-RVR, we believe based on our initial market research that 30% to 40% of patients with AFib experience one or more symptomatic episodes of RVR per year that require treatment, suggesting a target addressable market of approximately three to four million patients in 2030 for etripamil in patients with AFib-RVR.

New Drug Application Status

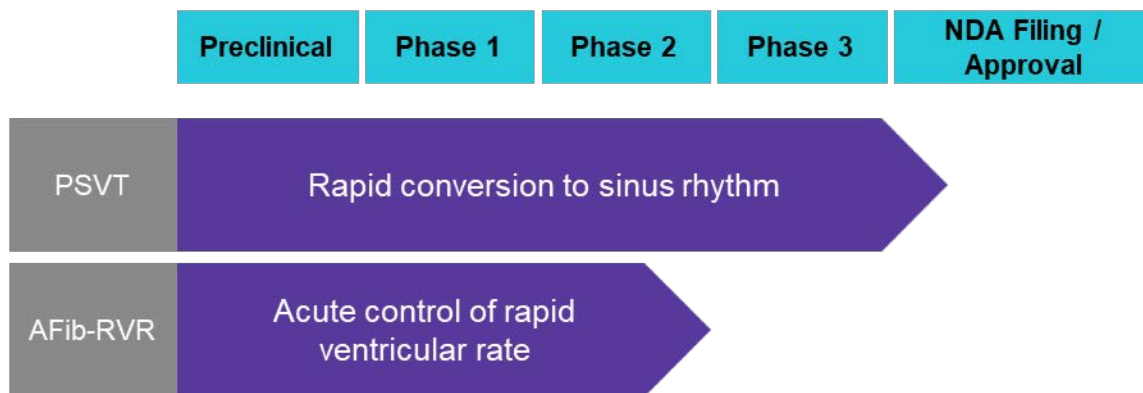
In October 2023 we submitted a New Drug Application, or NDA, for marketing approval in the United States for etripamil for the treatment of PSVT. On December 26, 2023 we announced that we received a refuse-to-file, or RTF, letter from the FDA. Upon preliminary review, the FDA determined that the NDA was not sufficiently complete to permit substantive review. The FDA requested clarification about the time of data recorded for adverse events in our Phase 3 clinical trials; FDA did not express concerns about the nature or severity of adverse events, or AEs.

In February 2024, we held a Type A Meeting with the FDA to determine next steps for the filing for marketing approval. The FDA indicated that the timing of AEs in question had minimal impact on the overall characterization of the etripamil safety profile, based on the FDA's review of the affected data which was mainly related to AEs associated with local drug administration site tolerability and, importantly, did not appear to affect the assessment of serious adverse events and/or AEs of special interest for a calcium channel blocker. To align with the FDA's guidance in preliminary response to our questions presented to the FDA in our Type A Meeting request, we plan to restructure the data sets that capture timing of reported AEs, reformat certain data files to facilitate FDA's analyses, and resubmit the NDA. Based on the guidance received during the Type A Meeting, we expect that this approach will address the RTF from the FDA. The FDA has not requested that we complete additional clinical efficacy or safety trials prior to resubmitting the NDA. We expect a standard NDA review period following resubmission of the NDA for etripamil for PSVT. The NDA resubmission is planned for the second quarter of 2024.

In connection with the revised timeline for NDA submission, we have undertaken certain cash conservation measures to reduce spend through program deferrals and team restructuring and expect that our existing cash resources will fund operations into 2026, including through the expected Prescription Drug User Fee Act date for the NDA resubmission. We expect the implementation of these cash conservation measures to be substantially completed in the first quarter of 2024. If FDA approval is granted, we expect to receive a \$75 million payment under an existing royalty agreement, which is intended to fund the potential commercial launch of etripamil for PSVT.

Our Pipeline

The figure below sets forth the status and focus of etripamil:



PSVT Clinical Development Highlights

On October 17, 2022, we announced positive and statistically significant topline efficacy and safety data from the Phase 3 RAPID clinical trial of etripamil in patients with PSVT. These results were further presented shortly thereafter, on November 7, 2022, as a Late-Breaking Clinical Trial Session at the American Heart Association Scientific Sessions 2022 (Chicago, IL) and subsequently published in *The Lancet* (June 2023). RAPID, our multi-center, randomized, double-blind, placebo-controlled, event-driven Phase 3 trial, enrolled 706 patients across clinical sites in North America and Europe. Patients were randomized 1:1 to a regimen of self-administering a first dose etripamil nasal spray, with a repeat dose 10 minutes later if symptoms persisted, or a matching placebo regimen. Self-administration was prompted by a patient’s customary symptoms and was performed in the at-home setting without medical supervision. The RAPID trial achieved its primary endpoint, with patients taking the etripamil regimen demonstrating a highly statistically significant and clinically meaningful difference in time to SVT conversion as compared to placebo. A Kaplan Meier analysis demonstrated a significantly greater proportion of patients who took etripamil converted within thirty minutes compared to placebo (64.3% vs. 31.2%; hazard ratio, or HR, 2.62; 95% CI 1.66, 4.15; p<0.001). By 90 minutes post-study drug administration, 80.6% of etripamil patients converted versus 60.7% of placebo patients (HR = 1.93; 95% CI 1.349, 2.752; p<0.001) and statistical significance was maintained throughout the 5-hour observation window. Statistically significant reductions in time to conversion in patients who took etripamil were evident early and persisted throughout the observation window of the study compared to placebo. The median time to conversion for patients in RAPID who self-administered etripamil was 17.2 minutes compared to 53.3 minutes for patients on placebo. The safety and tolerability data from the RAPID trial continue to support the potential self-administration use of etripamil, with findings consistent with those observed in prior trials. The most common randomized-treatment emergent adverse events, or RTEAEs, adverse events, or AEs, which occurred within 24 hours of etripamil administration, were related to the nasal local administration site. Overall, the majority of RTEAEs were reported as mild (68%) or moderate (31%). There were no serious AEs related to etripamil.

The use of additional medical interventions and emergency department utilization were important secondary measures of efficacy for both the RAPID and NODE-301 studies, although with the understanding that neither study was individually powered to expect statistical differences. In a pre-planned analysis across both studies, patients who self-administered etripamil sought additional medical interventions 43% less frequently (15% vs. 25%; $p=0.013$) and had 39% fewer emergency department visits (14% vs. 22%; $p=0.035$) than patients in the placebo arm.

In March 2023, we completed NODE-303 a Phase 3, multi-center, open-label safety trial, evaluating the safety of etripamil when self-administered without medical supervision over multiple, separate SVT episodes. Data from the completed NODE-303 open-label safety and RAPID extension studies are included in the etripamil PSVT NDA submission to the FDA.

AFib-RVR Clinical Development Highlights

In mid-2023, we held a pre-IND meeting with FDA and received guidance indicating that we could follow a supplemental NDA, or sNDA, regulatory pathway for the marketing approval for etripamil for the indication of AFib-RVR. The sNDA pathway potentially permits a single pivotal efficacy study to be sufficient for filing for marketing approval if etripamil is already approved for PSVT. In the first quarter of 2024, we met with the FDA in a Type A meeting. In this meeting FDA reiterated its prior guidance regarding the availability of an sNDA pathway. FDA further concurred with respect to key study elements including powering, inclusion criteria, patient population, and statistical analyses, and offered clarification with respect to the endpoints to guide the design of the Phase 3 study. We anticipate progressing to an End of Phase 2 meeting in mid-2024 as an important step to finalize the registrational study protocol.

On November 11, 2023, we presented positive Phase 2 data from the ReVeRA study, as a Featured Science Presentation at the American Heart Association Scientific Meetings (Philadelphia, PA) and as simultaneously published in *Circulation: Arrhythmia and Electrophysiology*. The data reflected that patients with AFib-RVR receiving etripamil nasal spray experienced rapid and statistically superior ventricular rate reduction and improved symptom-relief compared to placebo. In summary, the data demonstrated that etripamil NS was effective in patients with AF-RVR in substantially reducing VR (difference between etripamil vs. placebo in maximum reduction from baseline: -29.91 bpm; $p < 0.0001$). The median time to maximum reduction in VR was 13 min, and the duration of effect (reduction in VR from baseline) was at least 150 min. The median duration of maintaining a VR <100 bpm was 45.5 min in the first 60 min following drug in the etripamil arm. Etripamil treatment was associated with significant improvement in symptom relief and in treatment satisfaction as measured by the Treatment Satisfaction Questionnaire 9, or TSQM-9, patient-reported outcome instrument. Safety and tolerability reported in the 56-patient safety population who received etripamil was generally consistent with that observed in our PSVT program. The majority of common AEs were localized to the drug-administration site, and there was a low incidence of serious adverse events.

Our Strategy

Our goal is to identify, develop and commercialize innovative cardiovascular medicines, including etripamil for the treatment of PSVT, AFib-RVR and other cardiovascular indications, and additional clinical stage compounds for other cardiovascular conditions. The key elements of our business strategy to achieve this goal include the following:

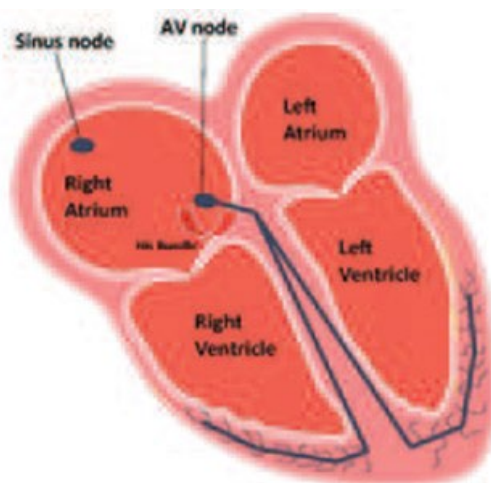
- ***Successfully complete development and obtain regulatory approval of etripamil for the treatment of PSVT.*** We are focused on efficiently developing and obtaining approval for etripamil to treat patients with PSVT. We intend to first seek regulatory approval in the United States, followed by Europe and other major markets.
- ***Expand the scope of cardiovascular indications for etripamil beyond PSVT.*** We are investigating, in a Phase 2 proof of concept study, the use of etripamil for the treatment of patients with AFib-RVR. We believe that etripamil could benefit patients with AFib-RVR based on the approved use of intravenous, or IV, calcium channel blockers in this indication. We are also exploring the additional cardiovascular opportunities for the use of etripamil.

- **Maximize the value of our programs by maintaining flexibility to commercialize our product candidates independently or through collaborative partnerships.** We currently have exclusive development and commercialization rights for etripamil for our initial indications of PSVT and AFib-RVR. We have commercialization plans and are establishing commercialization and marketing capabilities in order to commercialize etripamil in the United States. Outside of the United States, we are considering commercialization strategies that may include collaborations with other companies.
- **Leverage our expertise and experience to expand our pipeline of product candidates.** We seek to maximize our commercial opportunities by acquiring or in-licensing product candidates for indications with significant unmet need with a focus on novel treatments for cardiovascular or other conditions. Our leadership team has extensive experience in developing and commercializing successful drugs. We intend to leverage the collective talent within our organization and our network to guide our development plans and pipeline expansion.

Cardiac and Pharmacologic Basis of Development Programs

Normal Conduction

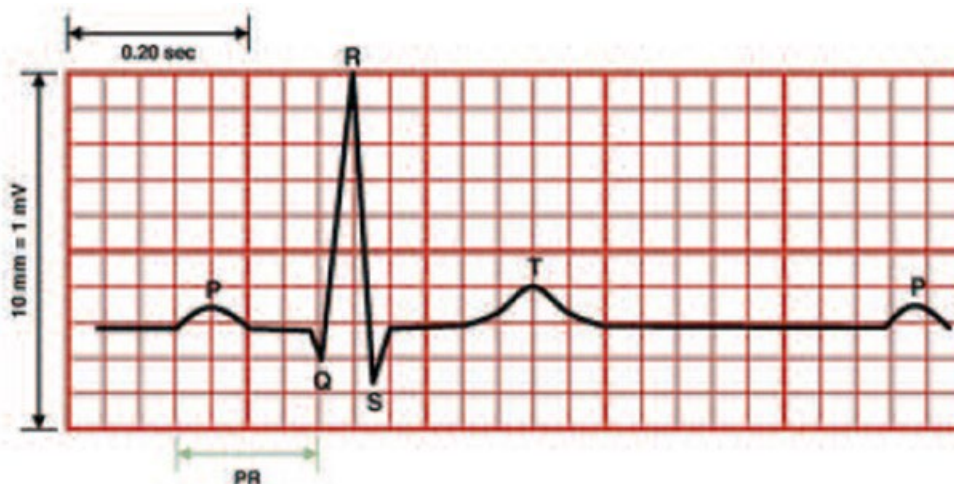
Within the right atrium, one of the heart's upper chambers, sits a specialized structure called the sinus node. The sinus node, serving as the heart's intrinsic pacemaker, generates an electrical signal which spreads throughout both atria and then is transmitted down to the lower chambers, the ventricles, via another specialized electrical tissue, the atrio-ventricular, or AV, node, which is shown in the figure below. Upon reaching the ventricles, the electrical signal then causes them to contract, pumping blood out to the lungs and the rest of the body. Another heartbeat does not occur until a new signal is generated from the sinus node and the cycle repeats. Under normal conditions, passage from the sinus node over the AV node is the only way for the electrical impulse to travel from the atria down to the ventricles.



The electrical signal of each heartbeat can be detected by placing sensors known as electrodes over the skin, and recorded over time in a tracing known as an electrocardiogram, or ECG. The ECG measures signal voltage and duration. To the trained interpreter, an ECG conveys a large amount of information about the structure and function of the heart, including among other things, heart rate and rhythm. Under normal physiologic conditions, an ECG has a characteristic pattern of waves corresponding to the electrical activity, contraction and relaxation of each heart chamber. This normal functioning is referred to as sinus rhythm and occurs at a heart rate of between 60 and 100 beats per minute at regular intervals.

As seen in the figure below, the various waves of an ECG tracing corresponding to the events of a single heartbeat are named with the letters P, Q, R, S and T. The interval between the P wave and the R wave, known as the PR interval, is a measure of conduction over the AV node. A normal PR interval is 0.12-0.20 seconds.

ECG Tracing Graph – Heartbeat



Arrhythmias

A disruption in the heart's normal rhythm or conduction of electrical signals is called an arrhythmia. An arrhythmia can take the form of the heart beating too quickly, too slowly, or with an irregular pattern. A faster than normal heart rate is a tachycardia; a slower than normal heart rate is a bradycardia. Symptoms of an arrhythmia can include palpitations, lightheadedness or dizziness, chest pain, shortness of breath, or sweating; these symptoms can be markedly severe, and in advanced cases of some arrhythmias, resultant signs can include worse morbidities and even mortality. PSVT and atrial fibrillation are two of the most commonly occurring arrhythmias. While PSVT is characterized by a faster than normal heart rate where the heart beats at regular intervals, with AFib-RVR the heart often beats faster than normal and with an irregularly irregular rhythm. Pharmacologic treatment of PSVT focuses on terminating the arrhythmia using an agent to prolong the refractoriness (the recovery time between consecutive activations) of the AV node or to prolong conduction over the AV node. With AFib-RVR, there are two approaches to treatment: rate control to reduce the heart rate and rhythm control to restore sinus rhythm and prevent AFib recurrences.

Etripamil

We designed the molecule of etripamil and we are developing the drug, a novel, potent and rapid-onset calcium channel blocker, as a nasal spray to be administered by the patient to terminate episodes of transient cardiovascular conditions as they occur. Rapid pharmacological action is both appropriate and sufficient to resolve an episode of SVT. We have completed Phase 3 development for PSVT. We are also developing etripamil to provide acute ventricular rate control for patients with symptomatic episodes of atrial fibrillation with rapid ventricular rate and are exploring other therapeutic applications in which a patient-administered, rapid-onset, non-dihydropyridine calcium channel blocking agent could provide patient benefit.

In our work to develop potential therapies, we sought to create new chemical entities as analogs of known molecular classes with clinically validated mechanisms of action. Our goal was to preserve the beneficial pharmacology of existing molecules while altering their pharmacokinetic profile with focused medicinal chemistry to produce drugs that are fast acting. As a result, we created a series of novel non-dihydropyridine, L-type calcium channel blockers containing chemical ester moieties that preserved the desired pharmacology on the heart but that could be rapidly metabolized in the blood by

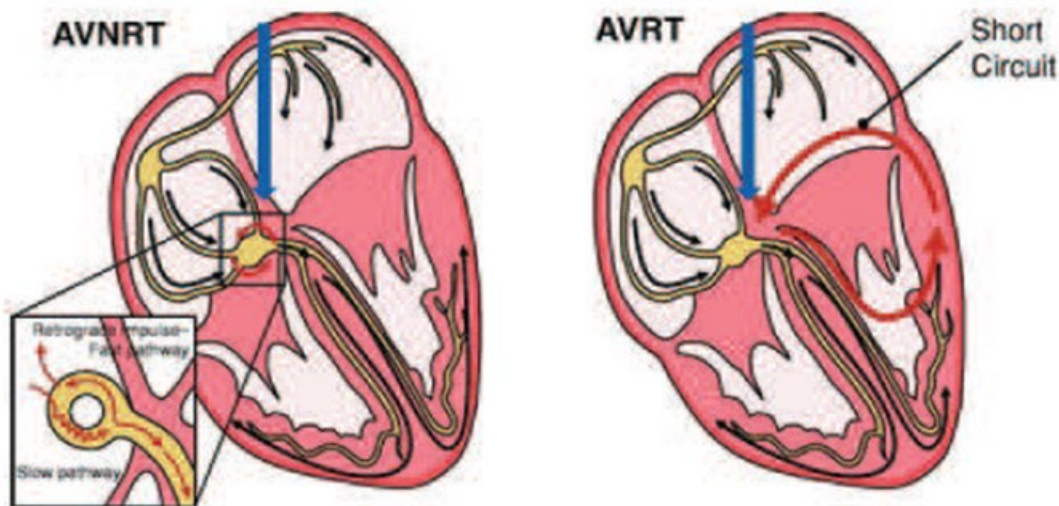
serum esterases. Etripamil resulted from this effort as a new chemical entity with a fast pharmacodynamic effect in humans, relative to oral calcium channel blockers.

We believe that the following attributes of etripamil make it a better treatment candidate for certain episodic cardiovascular conditions than current standards of care:

- Action: Etripamil is designed to be rapidly metabolized by blood-borne esterases, with the goal of reducing long-term side effects that may occur with chronic drug therapy.
- Absorption: Etripamil is designed to be absorbed into the bloodstream in less than 10 minutes through the inner lining of the nose, yielding a rapid-onset pharmacologic pattern consistent with parenterally administered drugs.
- Administration: Etripamil is designed, and has been investigated, to empower patients to self-administer treatment outside of a medical setting and as prompted by a patient's symptoms.

PSVT

PSVT is a serious, markedly symptomatic, and recurring cardiac arrhythmia, which is caused by altered electrical conduction within the heart, involving the AV node and over an abnormal electrical circuit in the substantial majority of cases. In the most common form of PSVT, AV nodal reentrant tachycardia, or AVNRT, there is an abnormal limb of electrical circuitry within the AV node which represents the substrate of the tachycardia. This abnormal circuitry is the basis for a reentrant arrhythmia which results in excessively rapid beating of both the atria and ventricles.



In the next most common form of PSVT, atrioventricular reciprocating tachycardia, or AVRT, there is an abnormal limb of electrical tissue, or bypass tract, that directly connects the atria and the ventricles. In AVRT, the bypass tract allows the signal to travel between the atria and ventricles as a “short circuit.” AVRT involves the AV node, in addition to the bypass tract. Thus, for both AVNRT and AVRT – two PSVT types that require the AV node as a part of their abnormal circuit, or AV-nodal dependent PSVTs – a drug which targets the AV node can represent a potential treatment. Non-dihydropyridine calcium channel blockers are a class of drugs that target the AV node, reflecting why etripamil has been an excellent therapeutic candidate for AVNRT and AVRT termination.

Current Treatment Options for PSVT

Treatment for PSVT depends on the frequency, duration, and severity of the episodes as well as patient preference. Current options for patients with PSVT to terminate an episode of SVT include vagal maneuvers, IV medication or external shock delivered in the emergency department. Additionally, some practitioners prescribe oral medications, such as calcium channel blockers, beta blockers and antiarrhythmic drugs to be taken at the onset of an episode. However, these oral medications interventions are generally not acutely effective. Long-term strategies include chronic drug therapy to reduce the frequency of episodes and cardiac ablation to potentially cure the disease. Patients may also elect to not treat their symptoms and simply endure episodes of SVT when they occur.

Vagal maneuvers are commonly attempted to terminate an episode, with low to modest success rates. These are physiological maneuvers that stimulate the vagus nerve, which can terminate an SVT episode. These include gagging, massaging one carotid artery, holding one's breath and bearing down (Valsalva maneuver), immersing one's face in ice-cold water, or coughing.

Currently approved acute pharmacological therapy for the treatment of an acute episode of SVT includes IV administration of approved AV nodal-blocking agents in an acute care setting. The current standard of care for treatment of episodes of SVT is adenosine, but prior to its approval in 1990, episodes of SVT were treated with IV calcium channel blockers, such as verapamil or diltiazem. When given as a rapid IV bolus, adenosine blocks conduction over the AV node, thereby interrupting the arrhythmia circuit and restoring the heart back to sinus rhythm. Adenosine temporarily stops the heart and patients have reported experiencing chest tightness, flushing and a sense of impending death. Physicians report that patients tell them that they feel like they are going to die. Adenosine is eliminated from the body in less than one minute but cannot be self-administered as it requires IV access. In-hospital IV administrations are associated with higher healthcare costs and are also unsettling and inconvenient for the patient. IV calcium channel blockers also slow conduction over the AV node during the course of several minutes. However, they are associated with the risk of excessive slowing of the heart rate and low blood pressure. According to treatment guidelines, patients in the acute care setting who fail pharmacologic treatment for PSVT could then receive direct current cardioversion, where an electric shock is applied to the heart to return it to sinus rhythm.

In an attempt to prophylactically control the frequency and duration of future SVT episodes, many patients will take chronic daily oral medications that modulate AV nodal conduction, such as beta blockers, L-type non-dihydropyridine calcium channel blockers, or antiarrhythmic drugs. Despite chronic daily oral medication, breakthrough SVT episodes that require visits to the emergency department may still occur, albeit for some patients at a reduced frequency. Chronic medication can lead to side effects such as sexual dysfunction or fatigue in the case of beta blockers and constipation in the case of verapamil. Some patients discontinue chronic oral medication due to intolerable side effects. Based on our market research, we estimate that approximately two thirds of patients with PSVT have been prescribed chronic medications such as beta blockers or calcium channel blockers to prevent SVT episodes or to treat other concomitant conditions such as hypertension.

The only potentially curative treatment available at the present time for PSVT is ablation, an invasive procedure, which works by directly cauterizing or freezing the short circuit that is the cause of the abnormal rhythm. This is achieved in an electrophysiology lab via catheters that are run through the patient's groin vessels and into the heart and uses burning or freezing techniques to destroy the heart's abnormal electrical tissue. Ablation single-procedure success rates for PSVT are reported to be 91% to 96%. However, we estimate that less than 10% of patients with PSVT per year choose this option, which we believe is due primarily to anxiety related to the procedure. Although ablations are generally considered to be safe by the treating community, as with any invasive procedure there are potential complications, which include bleeding, blood clots, pericardial tamponade, and transient or permanent heart block, with the latter requiring permanent pacemaker implantation.

Market Opportunity – Paroxysmal Supraventricular Tachycardia (PSVT)

We believe that PSVT is a large and under-recognized market that we estimate affects approximately two million Americans and results in over 600,000 healthcare claims in the United States alone per year, including more than 150,000 emergency department visits and hospital admissions and up to 80,000 ablations. Furthermore, we estimate that approximately 300,000 people are diagnosed with PSVT each year in the United States. We derive these estimates from the analysis of longitudinal claims data, which we believe is the most accurate method available to estimate the epidemiology of PSVT. A study in the *Journal of Clinical Electrophysiology* published in 2021 concluded that excluding patients with comorbid Atrial Fibrillation or Atrial Flutter, or AFib/AFL, leads to a conservative estimate of PSVT treated prevalence in the U.S. of approximately 1.3 million, while including those with comorbid AFib/AFL suggests a U.S. treated prevalence of approximately 2.1 million, with approximately 190,000 to 310,000 corresponding new cases each year.

Other published sources that attempt to quantify the epidemiology of PSVT, such as the MESA study published in the *Journal of the American College of Cardiology* in 1998, and the PREEMPT study published in the *Journal of the American Heart Association* in 2018, provide important demographic and clinical characteristic data on patients with PSVT. For example, in the MESA study, fewer than 40% of the adjudicated incident cases of PSVT would have been detected had the investigators limited their screening to those patients identified by the PSVT ICD9 Code (427.0). In addition, 21% of the incident patients with PSVT in the MESA study also had a diagnosis of atrial fibrillation (18%) or atrial flutter (6%). As an epidemiology tool, however, we believe these studies underestimate the incidence and prevalence of PSVT due to the episodic nature of the disease as well as the variability in the duration of the episodes, as the investigators in both studies relied only on data from patients presenting to healthcare settings acutely, with the episode confirmed on ECG during the encounter, to estimate the incidence and prevalence of PSVT.

Current treatment for PSVT also consumes significant healthcare resources. Research published in the *American Journal of Cardiology* in 2020 shows that costs for patients rose significantly in the pre-diagnosis year due to the difficulty of obtaining an accurate diagnosis. In the year following diagnosis, costs triple for those less than 65 years of age and double for those over 65 years of age, compared to matched controls. Total healthcare expenditures in the year following PSVT diagnosis ranged from \$20,000 to \$30,000 per patient, significantly higher than the expenditures observed for patients without PSVT (approximately \$6,500 per patient). Significant increases for both age groups were noted for emergency department visits. For those less than 65, the average cost of hospitalizations doubled as their inpatient rates quadrupled. Of note, catheter ablations following diagnosis represent only 23% of this increased spend, meaning most costs are unrelated to ablations. In total, approximately \$3 billion is spent annually in the U.S. on the management of PSVT.

Our Clinical Development Program for the Treatment of Paroxysmal Supraventricular Tachycardia

Current treatments do not address the medical need for a rapidly acting, effective, safe and patient-administered treatment that can be taken outside of a hospital or acute care setting at the onset of an SVT episode to restore the heart back to sinus rhythm. We believe that etripamil will fill this unmet need. We completed a Phase 1 clinical trial (study MSP-2017-1096), which supported the selection of four doses of etripamil for Phase 2 development, followed by a Phase 2 clinical trial in adult patients to evaluate the effects of four doses in patients with PSVT. Both trials assessed nasally administered etripamil compared to placebo. Based on discussions with the FDA, we initiated a major Phase 3 clinical trial (NODE-301) in July, 2018 to assess the efficacy and safety of etripamil in the at-home setting and released topline data in March 2020. We have completed a second pivotal Phase 3 trial (RAPID) which demonstrated highly statistically significant efficacy to convert PSVT and favorable safety/tolerability of the drug. We have completed additional Phase 1 clinical trials, one that further characterized the PK and PD of intranasal etripamil in Japanese and non-Japanese healthy volunteers; a second that further characterized pharmacokinetics and safety of administering the drug in single- vs. repeated-dose approaches. We have also completed an open label Phase 3 safety trial (NODE-302), which provided further drug access to patients that had previously participated in the NODE-301 trial. The primary objective of the NODE-302 trial is to assess the safety of etripamil 70 mg in patients over multiple episodes. We completed a third Phase 1 clinical trial, assessing the impact of a repeat-dose regimen, in which patients take a second 70 mg dose of etripamil 10 minutes after a first dose of 70 mg, on the PK and safety of etripamil. We have completed NODE-303, which is an open label Phase 3 study that has the objective of collecting further safety data.

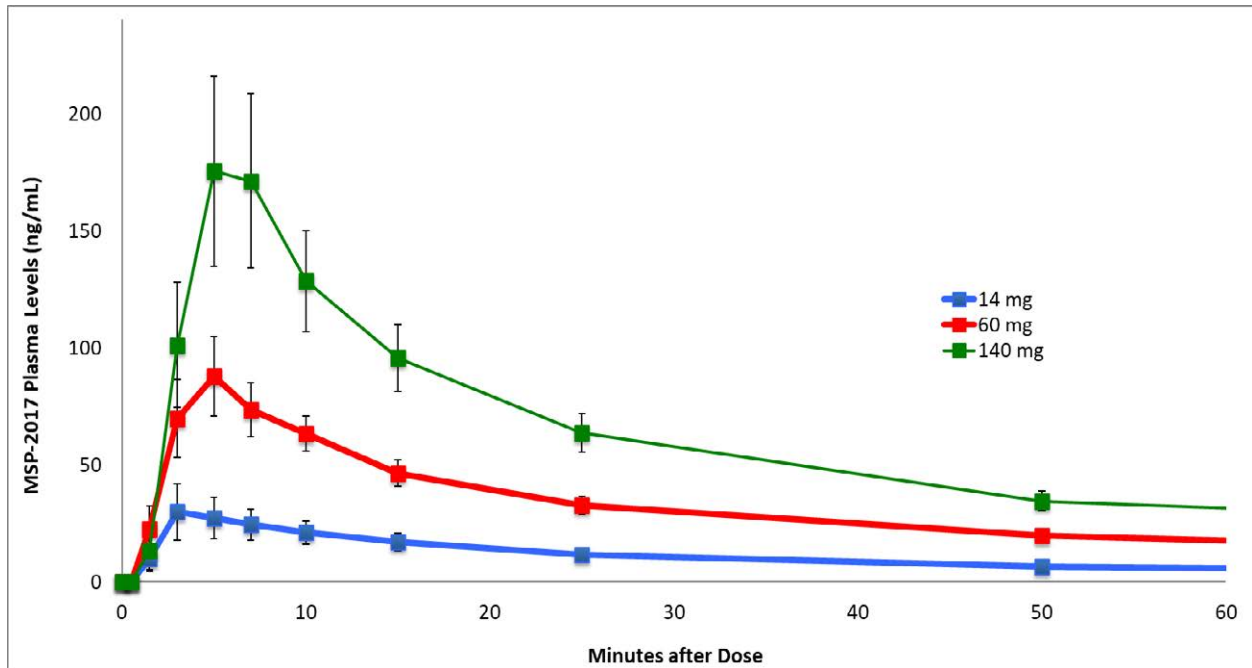
Phase 1 Clinical Data

We completed a Phase 1 clinical trial (MSP-2017-1096), in healthy volunteers, which was designed to assess the safety, PK profile, and cardiac pharmacology of intranasally administered etripamil in a randomized, double-blind, placebo controlled, single ascending dose trial. The trial’s primary objective was to determine the maximum tolerated dose or maximum feasible dose of two different formulations of etripamil administered via the nasal route in healthy, adult male subjects. All doses of etripamil were generally well tolerated, and there was no difference in the safety profile and PK between the two formulations of etripamil, referred to as MSP2017A and MSP2017B. The most commonly reported side effects were localized to the administration site, e.g., nasal irritation and nasal congestion. Potential concerns such as syncope, pre-syncope, lightheadedness, or decreases in systolic blood pressure below 90 mmHg or AV nodal blocks of second degree or worse were not observed. The study of formulation MSP2017A was stopped at 60 mg and MSP2017B was further studied at higher doses (105 mg and 140 mg). The Phase 1 results supported the selection of four doses of etripamil for Phase 2 development. We are using these Phase 1 data, and resultant Phase 2 data, to support further clinical development of etripamil in two indications: PSVT and AFib-RVR.

PK analyses have demonstrated rapid absorption and elimination following nasal administration of etripamil, as well as dose proportional systemic exposure, or area under the curve, and maximum plasma concentration for etripamil and its primary inactive metabolite. These findings were consistent across a range of seven doses of drug tested up to 140 mg. The 140 mg dose was the maximal feasible dose because neither the concentration (350 mg/mL) nor the volume (200 µL) of solution administered in each nostril could be increased. Due to these characteristics of formulation and delivery, a maximum tolerated dose of etripamil was not established. The figure below shows the rapid absorption via the nasal route and the rapid decrease in plasma concentration of etripamil.

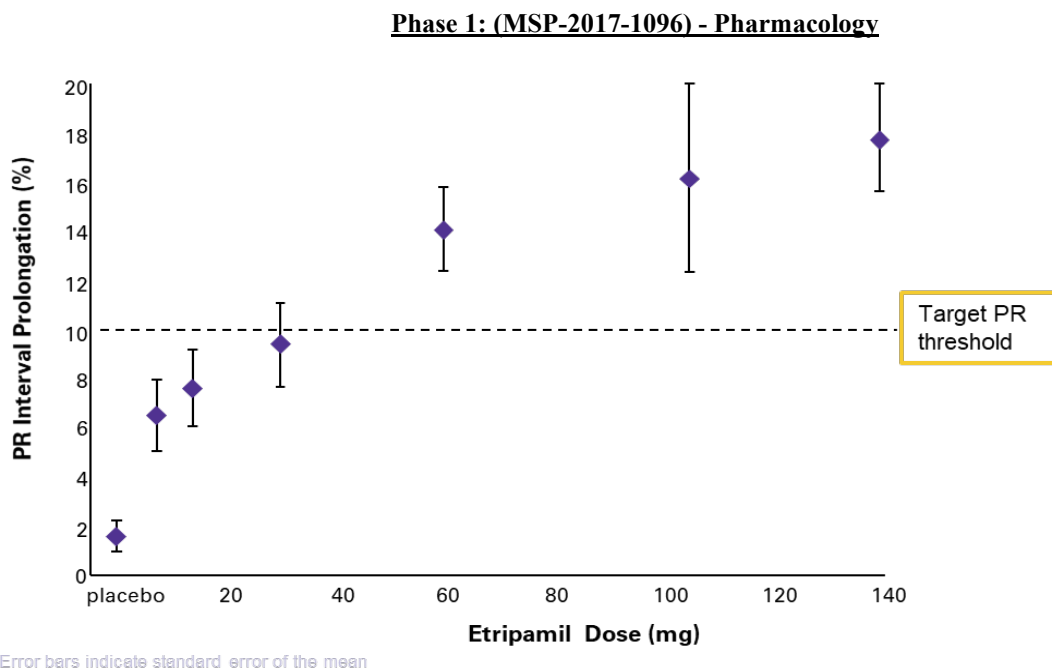
Phase 1: (MSP-2017-1096)

Pharmacokinetic Profile of Etripamil Plasma Concentrations



Error bars indicate standard error of the mean

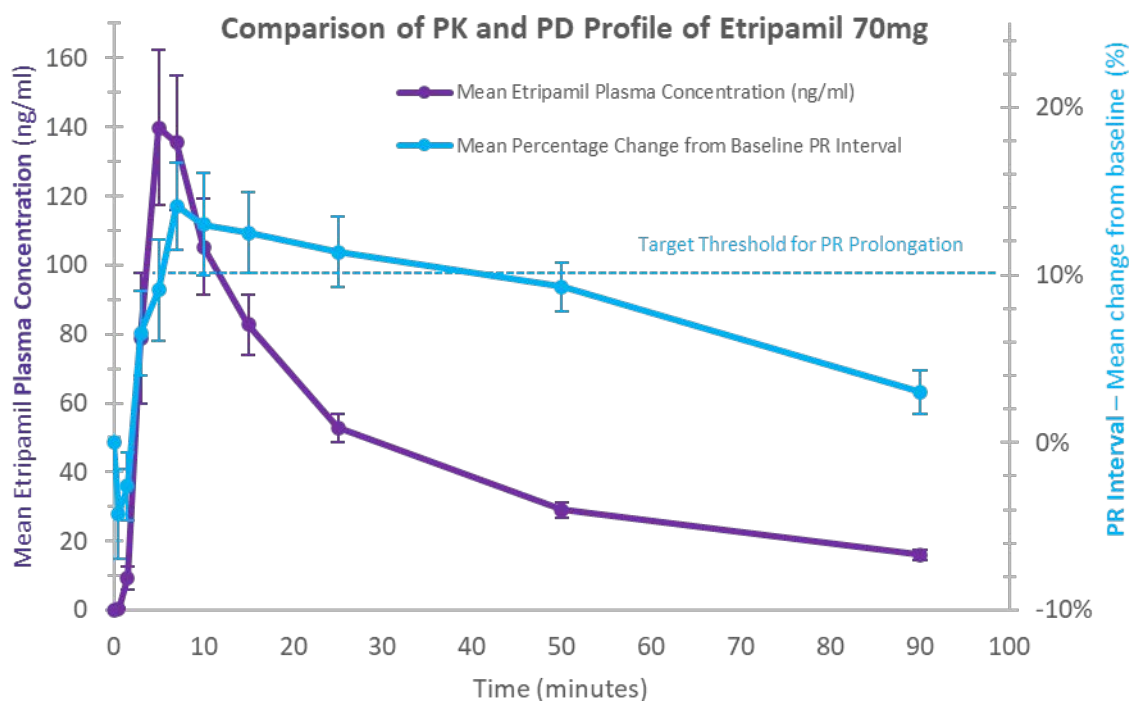
Prolongation of the PR interval as measured by ECGs, which reflects the impact of drug on AV-nodal conduction, was utilized as the pharmacodynamic, or PD, measure. A linear relationship was observed between the dose of etripamil and prolongation of the PR interval. The 60 mg, 105 mg, and 140 mg doses demonstrated a 10% or greater PR prolongation, which is shown in the figure below. This correlates with the reported slowing of conduction over the AV node that is necessary to convert an SVT episode to sinus rhythm. Such slowing of AV-nodal conduction, reflected by PR interval prolongation, has been observed clinically and through investigations with known intravenous AV-nodal targeted agents such as verapamil, adenosine, and tecadenoson.



We completed a second Phase 1 trial, NODE-102, comparing the PK and PD of etripamil 35 mg, 70 mg, and 105 mg versus placebo in Japanese and non-Japanese healthy volunteers. Once we determined there was no difference in PK and PD of etripamil between Japanese and non-Japanese participants, we pooled the data from the overall populations into a single dataset. We believe this trial provides further justification for the selected 70 mg dose in our Phase 3 program broadly and may be used to support further clinical development of etripamil in Japan.

As shown in the figure below, we observed a correlation between the PK profile of etripamil 70 mg, measured by change in PR interval from baseline over time, and the plasma concentrations of etripamil. With regard to pharmacodynamics, an approximate 10% increase in the PR interval has been reported to be a marker of meaningful prolongation in AV-nodal conduction that is needed to terminate an episode of PSVT. The data as demonstrated on the blue line on the graph below indicates that etripamil 70 mg is potentially impacting AV nodal conduction at meaningful levels for a period up to approximately 50 minutes.

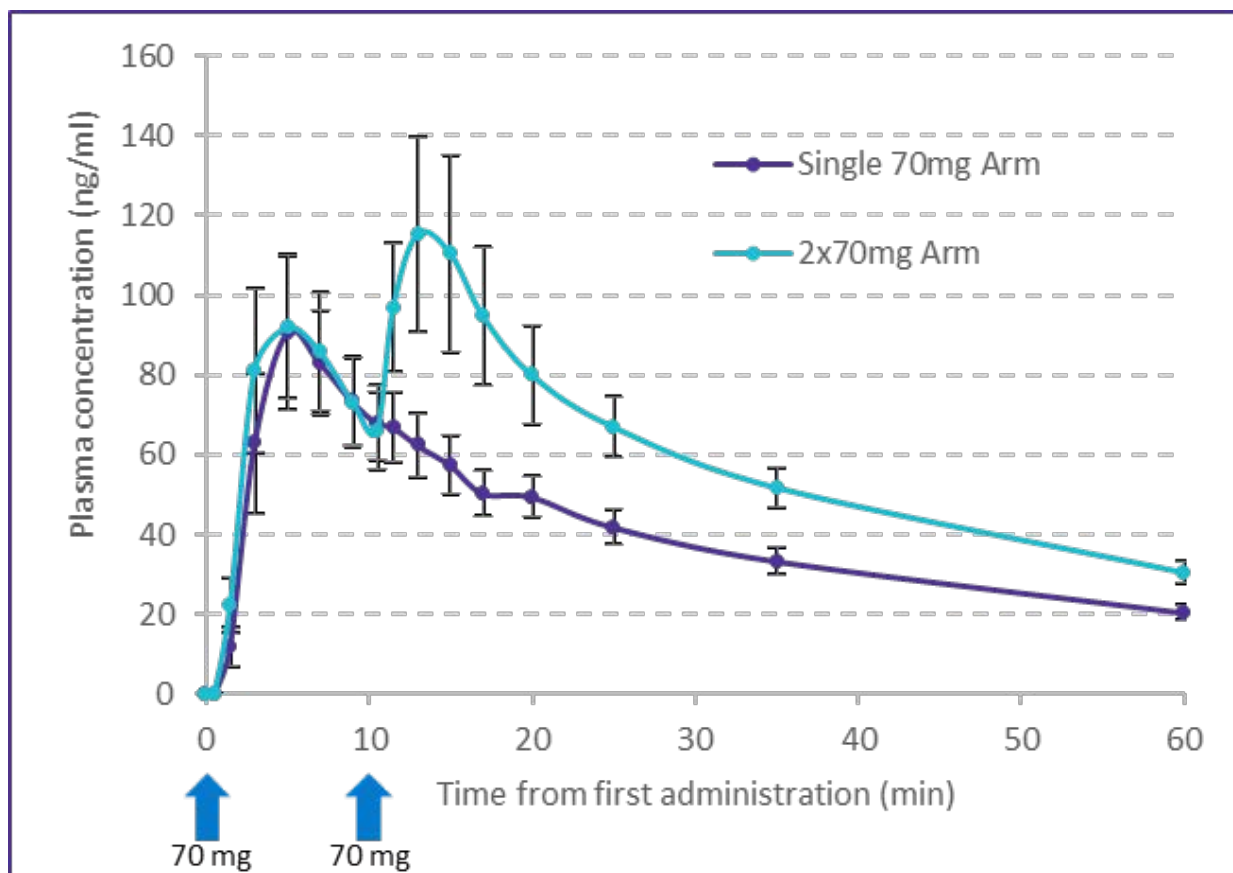
Phase 1: (MSP-2017-1205) NODE-102



The Phase 3 RAPID study incorporated a repeat-dose administration regimen of the study drug (70 mg of etripamil or placebo). Specifically, patients were instructed to administer a repeat administration of study drug if they did not experience relief from symptoms of PSVT within 10 minutes of the first administration of study drug. This tailored, staged drug regimen utilizes a repeat-dose similar to current PSVT treatment practices with intravenous drugs in the emergency department setting. Pharmacologic data supporting a repeat-dose approach were obtained from a Phase 1 study. A repeat dose regimen (two doses of 70 mg etripamil administered 10 minutes apart) was tested in study NODE-103. As shown in the figure below, this regimen resulted in greater systemic exposure to etripamil, as measured by an apparently increased second maximum concentration after the second administration, as well as an elevated total Area Under the Curve, compared to single-dose administration of 70 mg. Furthermore, from visual inspection of the data, the intended two-bolus PK plot can be observed.

We believe these PK data supports the hypothesis underlying our RAPID trial regimen that a second administration will augment etripamil exposure, while maintaining safety, and will improve impact of the drug on AV-nodal conduction thereby resulting in a greater therapeutic effect.

Phase 1: (NODE-103). One dose of 70-mg etripamil vs. repeat dose regimen administered 10 minutes apart



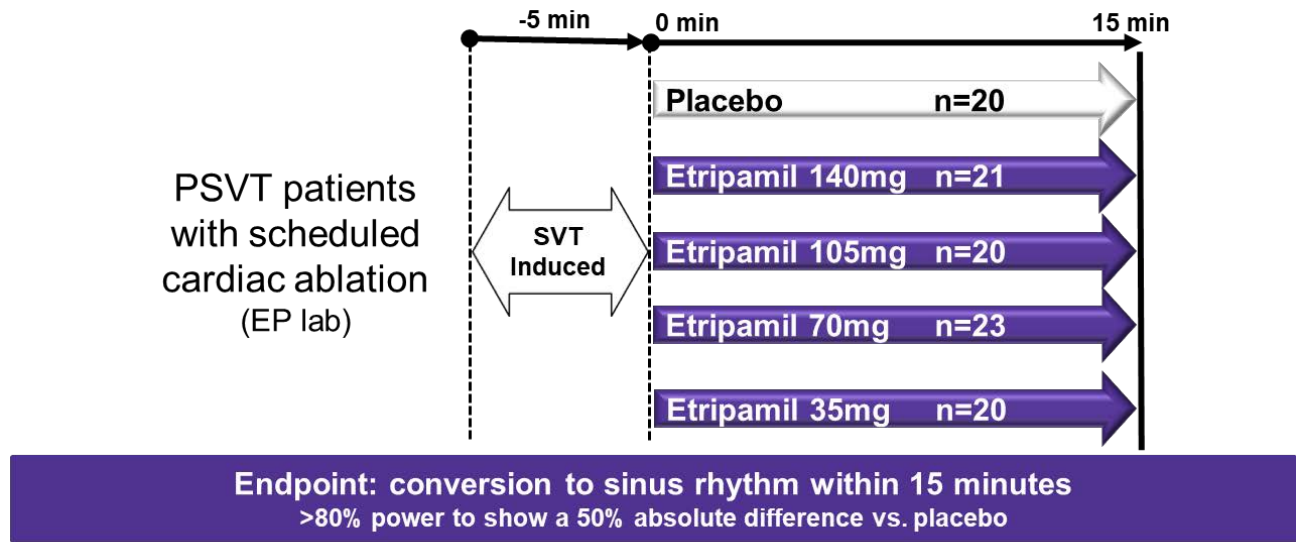
Error bars = standard error

Phase 2 Clinical Data

We completed a Phase 2 multicenter, randomized, double-blind, placebo controlled clinical trial in the United States and Canada, NODE-1, to evaluate the effects of four doses of etripamil in patients with PSVT. In order to demonstrate the effectiveness and safety of etripamil to terminate SVT in a controlled setting, we conducted the study in the electrophysiology, or EP, laboratory setting, where an SVT episode could be induced in patients scheduled to undergo an EP study and ablation. The primary objective of this trial was to demonstrate the superiority of at least one dose of etripamil over placebo in terminating SVT. The secondary objectives were to determine the minimally effective dose of etripamil, to establish a dose related efficacy trend for etripamil, and to evaluate the safety of etripamil in a clinical setting. The trial was statistically powered at more than 80% to show a 50% absolute difference of etripamil versus placebo.

The trial enrolled 199 patients, of which 95 withdrew prior to dosing: 70 due to inability to induce (n=42) or to sustain (n=28) SVT, five based on physician discretion, one lost to follow up, one due to withdrawal of consent, and 18 for other reasons. The mean age of patients was 52.2 years (range, 19 to 85 years). As shown in the figure below, SVT was induced and sustained for five minutes in 104 patients, who were randomized into one of five dosing cohorts. Four cohorts received intranasal doses of etripamil (35 mg, 70 mg, 105 mg, or 140 mg) and one cohort received matching placebo. All doses of study drug were delivered in a double-blind fashion in which healthcare providers administered four 100 µL sprays from four different single-spray devices. There were no imbalances in baseline characteristics across the five treatment groups. The mean heart rate in SVT at time = 0 was 177 bpm in the placebo group and 168 bpm, 173 bpm, 180 bpm, and 155 bpm in the etripamil 35-mg, 70-mg, 105-mg and 140-mg groups, respectively.

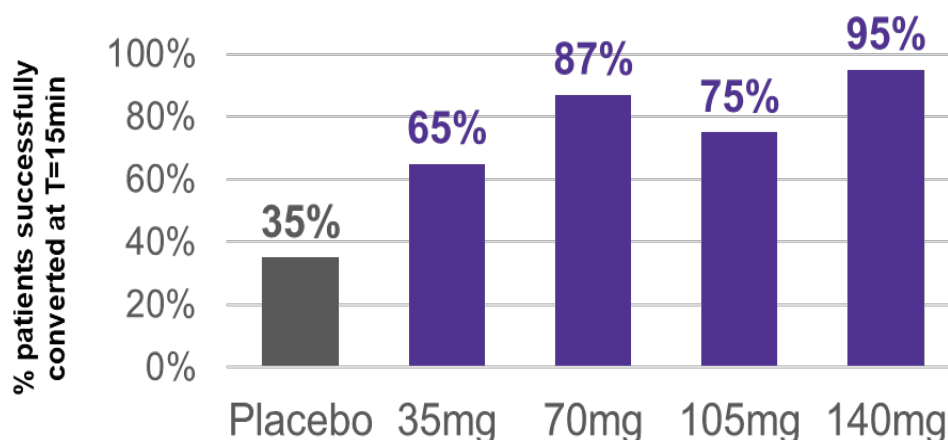
Phase 2: (MSP-2017-1109) NODE 1 – Clinical Trial Design



EP = electrophysiology, SVT = supraventricular tachycardia, PSVT = Paroxysmal Supraventricular Tachycardia

The primary endpoint in this clinical trial was the conversion of SVT to sinus rhythm within 15 minutes after administration of etripamil or placebo. As shown in the figure below, the percentage of patients in whom SVT converted to sinus rhythm within 15 minutes of study drug administration was 65% with 35 mg etripamil, 87% with 70 mg, 75% with 105 mg and 95% with 140 mg, compared with 35% in the placebo arm. The three highest doses of etripamil showed statistically significant conversion rates compared with placebo. Statistical significance expresses the probability that the results of a particular study could have occurred purely by chance. Statistical significance is assessed by the FDA and other health regulatory agencies in evaluating marketing approval applications. FDA and other regulatory agencies review the strength of the statistical evidence and whether it supports the claims of the applicant. The primary endpoint, statistical methods for the trial and a p-value boundary for achieving statistical significance for a clinical trial are typically defined before the trial begins. If the probability of observing the calculated statistic is smaller than the p-value boundary, the primary endpoint is considered statistically significant. P-value is a conventional statistical method for measuring the statistical significance of clinical results. A p-value of 0.05 or less represents statistical significance, meaning there is a less than 1 in 20 likelihood that the observed results occurred by chance. The FDA utilizes statistical significance, as measured by p-value, as an evidentiary standard of efficacy and typically requires a p-value of 0.05 or less to demonstrate statistical significance.

Phase 2: (MSP-2017-1109) NODE 1 - Etripamil Conversion Rates from SVT to Sinus Rhythm

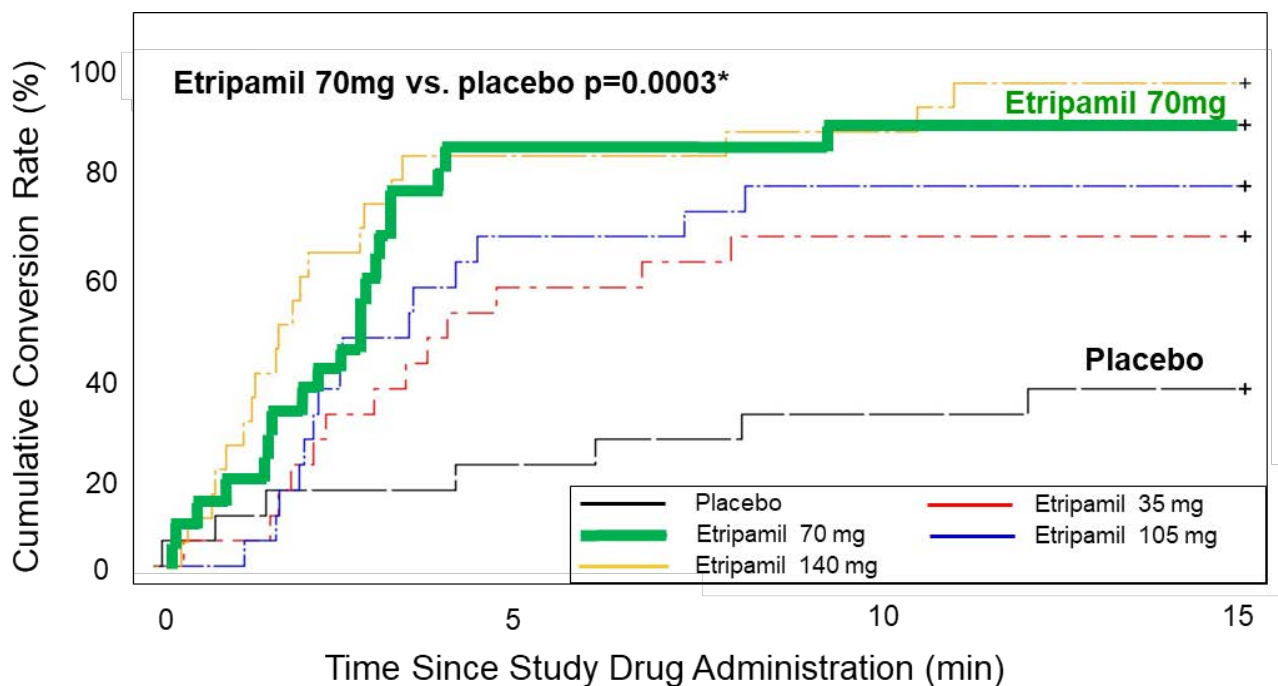


# patients converted at 15 min	7/20	13/20	20/23	15/20	20/21
p-value		0.1128	0.0006	0.0248	<.0001

Source: Stambler, B.S. et al.; Etripamil Nasal Spray for Rapid Conversion of Supraventricular Tachycardia to Sinus Rhythm; J Am Coll Cardiol. 2018;72(5):489-97

In a post-hoc analysis conducted to inform our Phase 3 trial design, the patients' times to conversion of SVT to sinus rhythm were examined. As shown in the following Kaplan Meier plot, patients successfully converting to sinus rhythm during the 15-minute study window, the three highest doses of etripamil (140 mg, 105 mg, and 70 mg) demonstrated statistically significant shorter time to conversion of SVT compared with placebo. The 70-mg dose showed a rapid onset of action with a median time to conversion of less than three minutes after nasal administration of etripamil. Doses of drug above 70 mg, given as single-dose administrations in this study, did not yield meaningfully greater degrees of conversion of SVT. These data contributed greatly to selection of etripamil dose for the Phase 3 program.

Phase 2: (MSP-2017-1109) NODE 1 – Etripamil Time to Conversion from Supraventricular Tachycardia to Sinus Rhythm



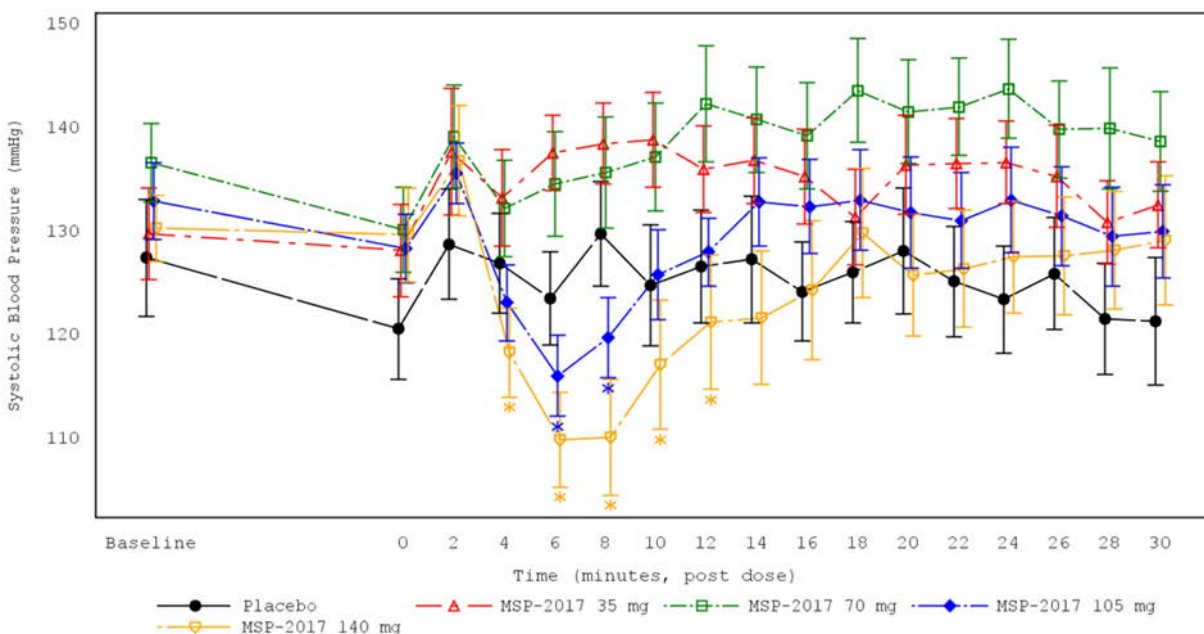
*Hazard Ratio and 95% Confidence Intervals etripamil 70mg vs. placebo; 4.99 (2.09, 11.93)

Overall, etripamil was well tolerated, and the most common adverse events were localized to the nasal route of administration, e.g., nasal irritation or nasal congestion, reported by up to 60% and 45% of patients, respectively, after etripamil (versus none after placebo). Specifically, the 70-mg dose was reported to have 48% nasal irritation and 26% nasal congestion; however, these were transient and required no specific intervention. Most adverse events were mild (44.2%) or moderate (24.0%) across all treatment groups. At least one adverse event considered related to the study drug, according to the investigator assessment, was reported in 17 (85.0%) patients in the etripamil 35-mg group, 18 (78.3%) in the 70-mg group, 15 (75.0%) in the 105-mg group, 20 (95.2%) in the 140-mg group and 4 (20.0%) in the placebo group. The incidence of adverse events was not dose-dependent. Hypotension, or low blood pressure, was reported as an adverse event in two patients, one in the 105-mg group and one in the 140-mg group. Neither event led to sequelae or a serious classification.

A total of three patients experienced severe adverse events that were considered possibly related to etripamil. One patient who received a 35-mg dose of etripamil experienced facial flushing, shortness of breath, and chest discomfort. One patient who received a 105-mg dose of etripamil had nausea and vomiting, as well as a severe and serious cough. One patient who received a 140-mg dose of etripamil experienced a severe adverse event of second-degree AV block with relative hypotension, beginning five minutes after conversion to sinus rhythm; the AV block resolved after 43 minutes, was without sequelae observed, and ablation was subsequently performed. There were no adverse events that led to study discontinuation or death.

Calcium channel blockers have the potential to cause hypotension as a side effect. Thus, in our Phase 2 clinical trial, we recorded vital signs, including heart rate and blood pressure, before induction of SVT and every two minutes for 30 minutes after study drug was given (see figure below). We observed no meaningful reduction in mean blood pressure in the 35 mg or 70 mg etripamil cohorts but observed a transient decrease in the mean blood pressure in the two highest cohorts, 105 mg, and 140 mg. Due to the induction of SVT, the mean systolic blood pressure decreased at time 0 compared to the average at 20 and 10 minutes before SVT induction. Compared to baseline and time 0, systolic blood pressure measurements recorded from two minutes to 16 minutes post study drug administration showed no decrease in mean systolic blood pressure in the placebo or 35-mg groups, and maximum mean decreases of 2 mm Hg four minutes post dose in the 70-mg group, 17 mm Hg six minutes post dose in the 105-mg group, and 20 mm Hg six minutes and eight minutes post dose in the 140-mg group. As illustrated in the figure below, mean blood pressure reductions in these two groups were transient.

Phase 2: (MSP-2017-1109) NODE 1 – Etripamil Systolic Blood Pressure Over Time



* p < 0.05 vs baseline.

Baseline is defined as the average of the -20 and -10 minutes pre-dose measurements. Time 0 is defined as the average of the measurements during SVT between -5 and 0 minutes before study drug administration. Mean and standard error (SEs) values were calculated based on available data at the relevant time point. MSP-2017 means etripamil. Error bars indicate standard error of the mean.

Based on the combination of efficacy and safety data from our Phase 2 trial, we selected the 70 mg dose of etripamil for our subsequent clinical trials.

Clinical Development of Etripamil for a PSVT Indication

In accordance with our interactions with regulatory agencies, our Phase 3 clinical program has included:

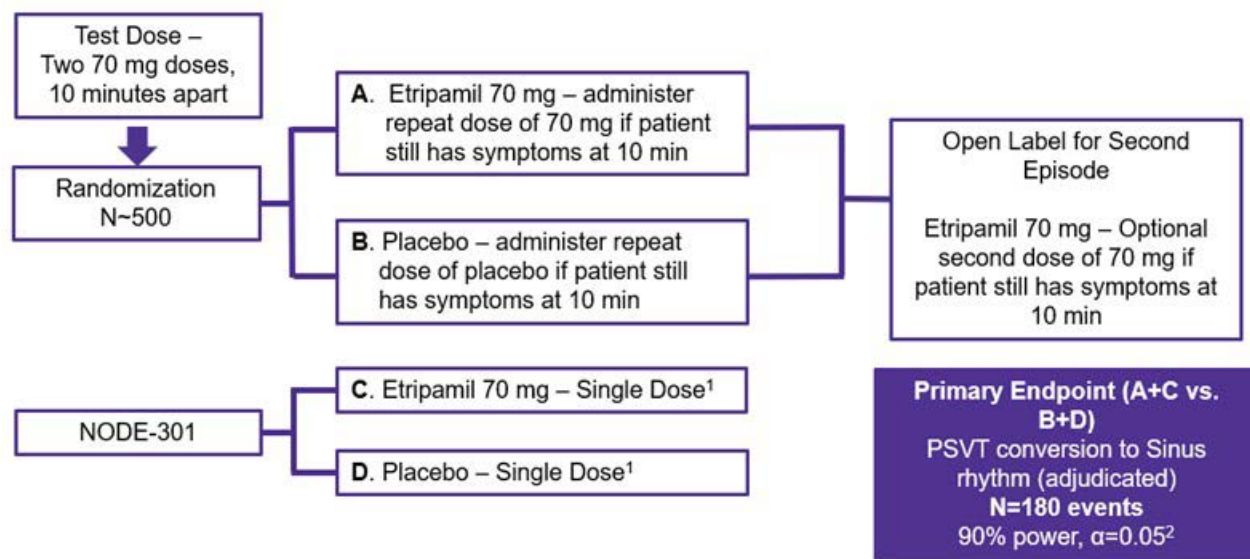
- RAPID, a confirmatory pivotal efficacy trial to assess the time to conversion of PSVT to sinus rhythm due to treatment with etripamil compared to placebo in the at-home setting and, in this trial, utilizing an optional repeat-dose regimen.

- NODE-301 part 1, a pivotal efficacy trial to assess the time to conversion of PSVT to sinus rhythm due to treatment with etripamil compared to placebo in the at-home setting.
- NODE-302, an open-label extension of NODE-301 that enrolled patients who completed NODE-301 in order to collect safety data on subsequent (recurrent) episodes in the at-home setting, and.
- NODE-303, an open-label global safety trial to complete the safety assessment of etripamil in the at-home setting to support an NDA and other regulatory filings.

Phase 3 Clinical Trials

RAPID Study. The RAPID trial was a placebo-controlled, double-blinded, randomized, event-driven Phase 3 clinical trial conducted in the United States, Canada, and Europe to evaluate 70 mg of etripamil (with an optional repeat dose of drug) versus placebo in terminating an SVT episode in the at-home setting. RAPID, also named NODE-301 part 2, was originally intended to collect double-blind data from randomized patients who had not yet experienced an SVT event after the NODE-301 study reached its target number of adjudicated SVT events. After receiving guidance from the FDA on our Phase 3 program, we amended and expanded NODE-301 part 2 and renamed it the RAPID trial; and, with regulatory agreement, RAPID is inferentially separate from NODE-301 part 1. The RAPID trial, an event-driven trial like the prior Phase 3 one, was projected to enroll approximately 500 patients and was defined to be completed after a total of 180 confirmed SVT events occurred. Patients enrolled in the RAPID trial were randomized 1:1 (etripamil:placebo). The graphic below shows the design of the RAPID trial. The protocol amendment changing NODE-301 part 2 to RAPID, and incorporating an important repeat-dose treatment regimen, was implemented across all clinical study sites over 2021. Prior to the RAPID / repeat-dose amendment being fully implemented, a total of 34 patients dosed themselves with single dose study drug of which 29 were confirmed by the adjudication committee to be SVT (i.e., groups C+D in the trial design graphic, which had been randomized 2:1, etripamil:placebo).

Phase 3: (MSP-2017-1138) RAPID – Trial Design



⁽¹⁾ Arms C and D (single-dose regimen) will be only the patients enrolled under NODE-301 who have had an episode prior to the RAPID Study protocol amendment

⁽²⁾ Wilcoxon analysis modeling from NODE-301 data

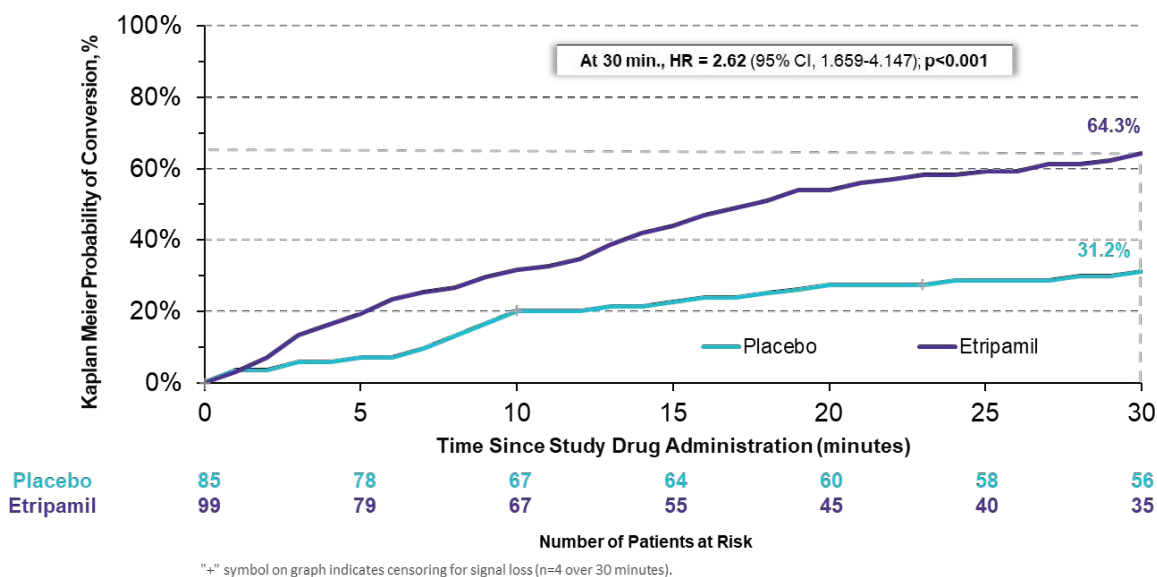
Under the RAPID statistical analysis plan (SAP), the primary efficacy endpoint for the study was defined as time to conversion over the first 30 minutes, with a target p-value of less than 0.05. (This endpoint was agreed upon with FDA and other regulatory bodies because it, when assessed in either a prespecified or in a post hoc analysis for NODE-301 part 1, was statistically significant and showed a compelling treatment effect.) This endpoint supports the desire and need of patients to address their PSVT symptoms rapidly during an episode and have a normal cardiac rhythm restored during a time-window that would avoid additional medical intervention and visiting an emergency department. Based on interactions with PSVT-treating physicians and cardiovascular thought leaders, it is clear that a 50% conversion rate within 60 minutes would be a clinically meaningful outcome given the highly symptomatic nature of SVT episodes and the lack of approved at-home treatments. In addition to its clinical relevance, primary assessment by 30 minutes is a time aligned with the drug's known pharmacologic characteristics.

The design of the RAPID study was based on power calculations utilizing NODE-301 Part-1 study data. The Kaplan–Meier probabilities of conversion to sinus rhythm by 30 minutes as 54% under etripamil treatment and 35% under placebo were the basis for effect-size assumptions, and indicated that 180 patients, each with a PSVT event confirmed by adjudication, would provide 90% power to detect a 19% relative-reduction treatment difference for the primary endpoint at a 2-sided-significance level of 0.05. It was anticipated that ≥ 500 patients would be randomized to accrue requisite confirmed PSVT events. Later and earlier time point data from NODE-301 part 1 for time to conversion, for patient reported outcomes, and for emergency department utilization were used to define assessments for secondary analyses in RAPID; these secondary analyses were pre-planned to fully characterize the efficacy profile of etripamil.

RAPID was performed at approximately 160 study sites in North America and Europe and enrolled patients with similar inclusion and exclusion criteria as the prior randomized Phase 3 study. Key eligibility criteria included, similar to the prior Phase 3 study: patients were aged ≥ 18 years with electrocardiogram-documented history of PSVT with sustained, symptomatic episodes (≥ 20 minutes). In the RAPID study, as prompted by PSVT symptoms, patients self-administered a first 70-mg etripamil or placebo dose and, if symptoms persisted beyond 10 minutes, a repeat dose of study drug (70-mg etripamil or placebo). Continuously recorded electrocardiographic data were blindly adjudicated for the primary endpoint, time-to-conversion of PSVT to sinus rhythm for ≥ 30 seconds by 30 minutes of first dose. Pre-defined secondary endpoints assessed the robustness of the primary findings and measured use of additional medical interventions and emergency department use for episodes of PSVT. Safety outcomes were assessed. This trial was registered at www.clinicaltrials.gov (NCT03464019).

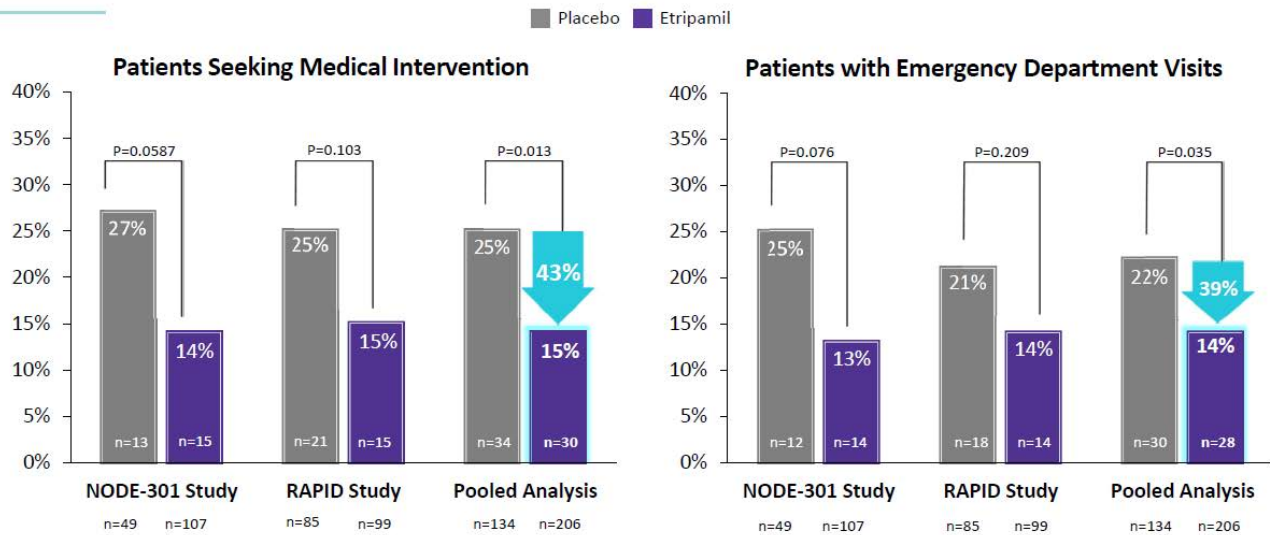
Among the 692 patients randomized, 184 self-administered the study drug for confirmed PSVT. Kaplan–Meier estimates of conversion rates by 30 minutes were 64.3% with etripamil and 31.2% with placebo (hazard ratio=2.62; $P < 0.001$), and statistically significant differences were observed by 300 minutes as well (hazard ratio=1.70; $P < 0.001$). Median time-to-conversion was 17.2 minutes (etripamil) versus 53.5 minutes (placebo). The Kaplan–Meier plot of cumulative incidence of conversion by 30 minutes is in the below figure.

Primary Endpoint: Conversion of Adjudicated PSVT to NSR 30 min



There were reduced rates of additional medical interventions and emergency-department visits following etripamil administration compared to placebo in the RAPID study, and these rates are consistent with those observed in NODE-301 part-1. Neither trial was sized to detect significantly different rates between treatment groups in need of additional acute care. Thus, a predefined analysis was performed on a dataset pooled between RAPID and NODE-301 part-1, confirming alignment between the studies' findings, and showing reduced rates of additional medical interventions (25.4% under placebo versus 14.6% under etripamil [P=0.013]) and emergency-department visits (22.4% under placebo versus 13.6% under etripamil [P=0.035]). Risk-reductions observed in RAPID indicate that the number-needed-to-treat with etripamil to convert an episode of PSVT within 30 minutes of drug administration is 3.0 and to prevent an emergency visit for PSVT is 14.1, within the range for effectiveness of a treatment for a symptomatic condition.

Medical Interventions and Emergency Department Visits RAPID & NODE-301 Studies



Pooling of data and analyses were prespecified in RAPID statistical analysis plan. Statistical analyses performed by Chi-square test for each study data set and pooled data set. Sources: American Heart Association Scientific Sessions, Late-Breaking Clinical Trial Presentation (Nov. 2022); International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Presentation (May 2023)

The majority of adverse events were localized at the administration site and mild; there were no serious etripamil-related events. A blinded, independent examination of ECG data by expert adjudicators showed no instances of AV block or significant pauses during randomized drug administration or in the hours following that.

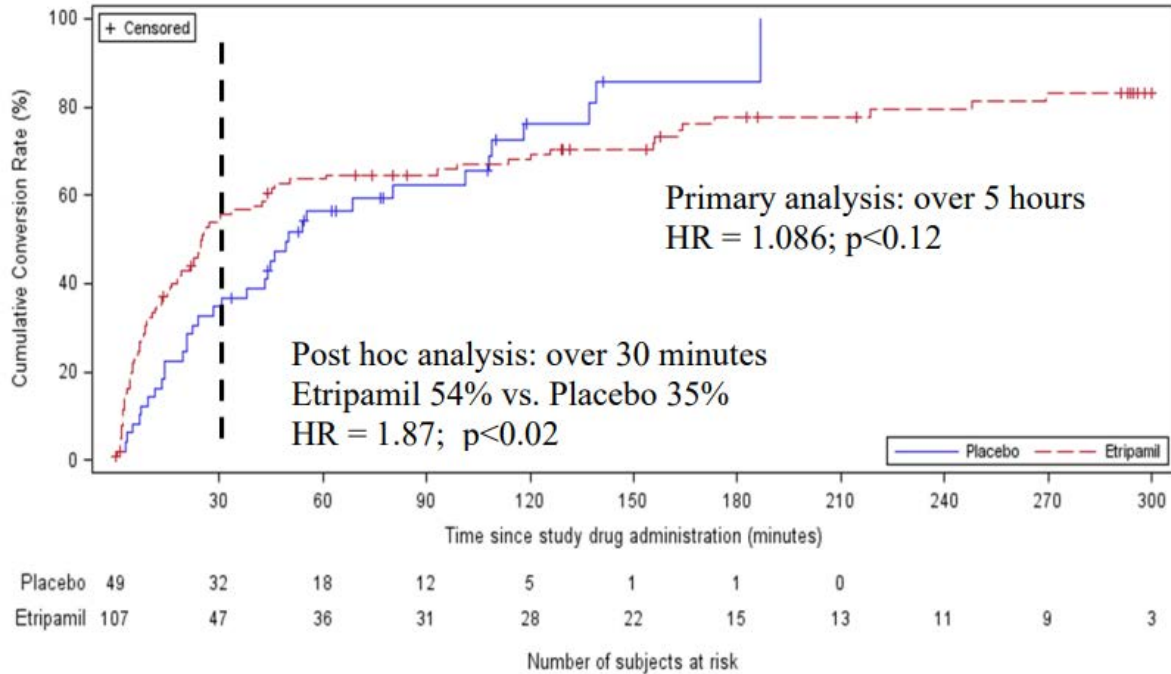
Results from the RAPID trial demonstrate that intranasal etripamil, self-administered in an at-home setting, with initial- and repeat-dosing prompted by symptoms, was superior to placebo for rapid PSVT conversion and well-tolerated. This symptom-prompted treatment approach was further supported by findings of improvement in patient-defined symptoms of PSVT. Reduced rates of additional medical interventions and emergency-department visits observed with etripamil potentially support this drug regimen for lessening the healthcare burden of PSVT.

NODE-301. NODE-301 is a placebo-controlled, double-blinded, randomized, event-driven Phase 3 clinical trial conducted in the United States and Canada to evaluate 70 mg of etripamil versus placebo in terminating an SVT episode in the at-home setting. As shown in the figure below, the primary endpoint is the time to conversion over a five-hour monitoring period following the administration of the study drug. Prior to randomization, eligible patients administered a test dose of 70 mg of etripamil in the investigator's office while in sinus rhythm in order to assess tolerability. Patients successfully completing the test dose were randomly assigned to the etripamil or placebo cohorts (2:1 randomization) and sent home with the study drug and a small portable electrocardiographic cardiac monitor to be used during patients' subsequent SVT episodes. Upon experiencing symptoms of an SVT episode, patients were instructed to first apply the cardiac monitoring device to record ECG data, then attempt a vagal maneuver, and, if that was not successful in terminating the episode, to then administer the study drug. Patients' ECG data were recorded using the electrocardiographic cardiac monitoring device for a period of five hours after study drug administration. Patients returned to the clinic for a follow up visit within one week following their SVT event for collection of further information. NODE-301 enrolled 431 patients across 65 sites in the United States and Canada, with 156 patients (107 etripamil, 49 placebo) receiving etripamil for an adjudicated true PSVT episode.

In March 2020, we reported topline results of the NODE-301 trial, referred to as NODE-301 part 1. The first part of NODE-301 did not meet its primary endpoint of time to conversion of SVT to sinus rhythm compared to placebo over the five-hour period following study drug administration, however, prespecified and post hoc assessments at 30 minutes were significant. The median time to conversion for etripamil was 25 minutes (95% CI: 16, 43) compared to 50 minutes (95%

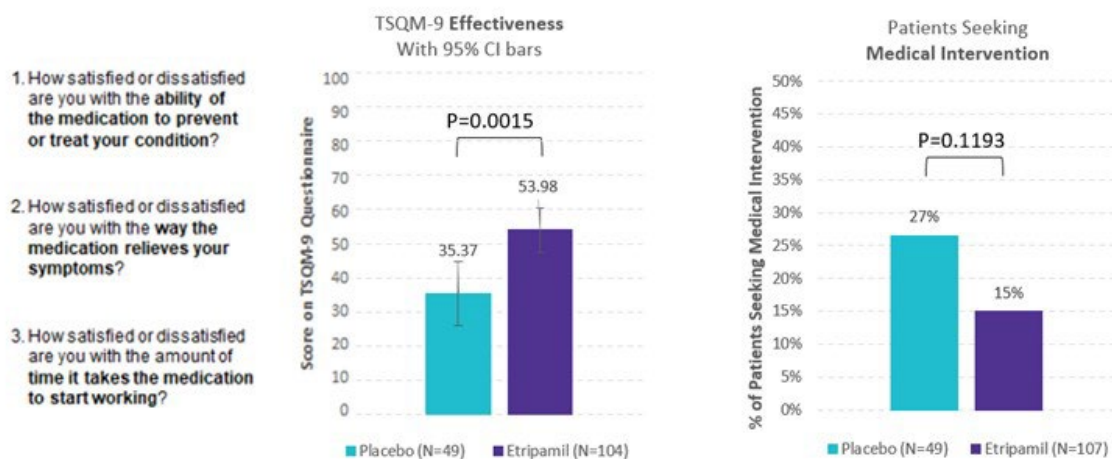
CI: 31,101) for placebo. As shown in the top figure below, despite the activity of etripamil to convert PSVT and its separation from placebo in the first approximately 30 to 60 minutes following study drug administration, results from the latter part of the analysis confounded the statistical analysis of the primary endpoint. Analysis of the first 30 minutes of the Kaplan Meier curve, shown in the bottom graph below, and the post hoc results at that time point were a 54% rate of conversion for the etripamil patients and 35% for the placebo patients. The results were statistically significant with a hazard ratio of 1.87 and a p-value of 0.02. Prespecified landmark analyses were aligned with these post hoc findings and also significant.

Phase 3: (MSP-2017-1138) NODE-301 Part 1 Efficacy – Time to Conversion over 5 Hours (Primary analysis) and Time to Conversion over 30 minutes (post hoc analysis, aligned with prespecified analyses at 30 minutes)



The study also demonstrated statistically significant improvements in patients taking etripamil compared to those taking placebo in the secondary endpoint of patient reported treatment satisfaction, as measured by a TSQM-9, including global satisfaction (p=0.0069) and effectiveness scores (p=0.0015). Additionally, there was a trend towards improvement in the percentage of patients seeking rescue medical intervention, including in the emergency department, with 15% and 27% etripamil and placebo patients, respectively, reporting such intervention (p=0.12).

Phase 3: (MSP-2017-1138) NODE-301 Key Secondary Efficacy Endpoints



Overall, etripamil was well tolerated when self-administered as a test dose during sinus rhythm or as a post-randomization dose during symptomatic PSVT. The most common ($\geq 5\%$) adverse events occurring within 24 hours of a test dose or those occurring more frequently with etripamil within 24 hours of a randomized dose were nasal discomfort, nasal congestion, epistaxis, rhinorrhea, throat irritation, and increased lacrimation, all of which were related to the nasal route of administration. The incidence of all other adverse events, including those related to abnormal vital signs, laboratory results, and ECG findings, was balanced between the 2 groups. No serious adverse events were observed within 24 hours of taking the study drug.

NODE-302. NODE-302 is the open label extension trial of NODE-301. We designed NODE-302 to primarily evaluate the safety of etripamil when self-administered without medical supervision and to monitor the safety and efficacy of etripamil for the treatment of multiple episodes of SVT.

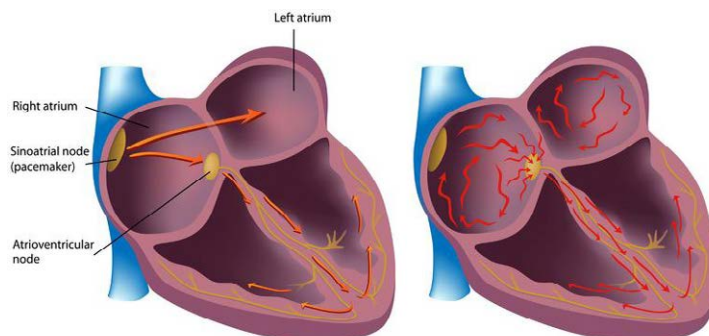
Patients who had successfully dosed with the study drug in NODE-301 and completed a study closure visit were eligible to enroll in NODE-302 to manage any subsequent episodes of SVT. Eligibility was also contingent on satisfying all inclusion and exclusion criteria, including not experiencing a serious adverse event related to the study drug or the study procedure that precludes the self-administration of etripamil.

We initiated NODE-302 in December 2018. The trial completed enrollment in 2020 and the study was presented at the Heart Rhythm Society Scientific Sessions as a late-breaking clinical trial in May 2022, and is in the process of being published. Overall, the safety and tolerability profile of etripamil 70 mg was favorable and generally consistent with what was observed in the NODE-301 study including for patients experiencing recurrent episodes.

NODE-303. NODE-303 is an open-label global safety trial enrolling patients who did not participate in NODE-301, NODE-302, or RAPID in order to collect safety data that, when combined with the safety data from the rest of the program, will form the safety dataset to be evaluated by the FDA and other regulatory agencies, forming the basis for marketing approval. We designed NODE-303 to evaluate the safety of etripamil when self-administered as prompted by symptoms and without medical supervision, and to evaluate the safety and efficacy of etripamil over multiple episodes of SVT. The NODE-303 trial is designed to closely reflect the expected utilization of etripamil in the post approval or ‘real-world’ setting and, for example, does not include an in-office safety test dose and includes a broad patient population including patients taking concomitant beta blockers and calcium channel blockers. In this study, patients had the opportunity to manage up to four episodes of SVT. NODE-303 was initiated in October 2019 utilizing the single 70 mg etripamil administration. In 2021, following FDA’s agreement, we initiated the change from the single 70 mg etripamil administration to the 70 mg repeat-dose treatment regimen. The FDA’s acceptance was based on initial safety data of the repeat-dose regimen experience gained in the RAPID study and the overall safety data from the etripamil clinical program.

Atrial Fibrillation

AFib is a common arrhythmia with an irregular and often rapid heart rate that can increase the risk of stroke, heart failure, and other heart-related complications. AFib can be, and often is, highly symptomatic. Symptoms include heart palpitations, shortness of breath, fatigue, and weakness, and underlying cardiac disorders can be worsened. Episodes of atrial fibrillation can come and go, or patients may have AFib that does not resolve. Although the heart arrhythmia in AFib itself usually is not life-threatening, it is a serious medical condition that sometimes requires emergency treatment. Additionally, AFib is associated with elevated risk of embolism and stroke and anticoagulant medications, also called blood thinners, are commonly prescribed to manage this risk. Uncertainty around symptom timing and episode length may impact a patient's quality of life. During AFib, the heart's two upper chambers, the atria, beat chaotically and irregularly—out of coordination with the two lower chambers, the ventricles, of the heart, as shown in the figure below.



Classification of AFib is used to determine the appropriate treatment modality for patients. The American Heart Association, or AHA, and the American College of Cardiology, or ACC, categorize AFib patients based on disease progression. These categories are defined as follows: paroxysmal, which involves AFib episodes that resolve spontaneously within seven days of symptom onset; persistent, which involves AFib episodes that fail to terminate within seven days of symptom onset and require treatment to convert back to sinus rhythm; long-standing persistent, which involves atrial fibrillation episodes that last longer than one year despite continued attempts to restore sinus rhythm; and permanent, which involves a joint decision by the treating provider and patient to no longer pursue cardioversion and leave the patient in AFib, focusing on rate control and symptom management. Disease progression in AFib is common with approximately 40% of AFib patients in the paroxysmal stage, 30% of AFib patients in the persistent and long-standing persistent stage, and 30% of AFib patients in the permanent stage. For purposes of simplicity, we do not differentiate the long-standing persistent classification from the persistent classification as the clinical impact of this differentiation has not been characterized. Concomitant structural heart irregularities including valvular dysfunction and the presence of active symptoms may also help to characterize patients and influence treatment decisions.

A common complication of atrial fibrillation is a rapid ventricular rate which can be defined as a heart rate of ≥ 110 beats per minute. Rapid, irregular, and inefficient cardiac pumping function induced by a rapid ventricular rate accounts for hemodynamic instability and many of the arrhythmia's symptoms. Frequently, new-onset patients with atrial fibrillation present with symptoms related to rapid ventricular rate.

Current Treatment Options for Atrial Fibrillation with Rapid Ventricular Rate

There are currently two major approaches to managing atrial fibrillation: rate control to lower a rapid heart rate, and rhythm control to restore and maintain a regular (sinus) rhythm and to prevent recurrent atrial fibrillation. Either of these management approaches, often performed by pharmacological means, may be given chronically or acutely, depending on patient preference and episode frequency and severity. The decision to pursue rate and/or rhythm control for atrial fibrillation episodes is dependent on a variety of factors, including episode severity, episode frequency, patient preference, and safety and tolerability of treatments. Several rhythm control strategies exist, including electrical cardioversion, catheter-based cardiac ablation, and anti-arrhythmic drug therapy. For rate control, the rapid heart rate of atrial fibrillation is typically treated with AV nodal blocking drugs (for example, calcium channel blockers, beta blockers, or less commonly

digoxin) to control symptoms and improve cardiac function/hemodynamic stability. Oral rate control drugs used acutely do not provide immediate ventricular rate control due to a 30-to-60-minute delayed onset of action. Breakthrough episodes of symptomatic atrial fibrillation often require urgent medical treatment with IV calcium channel blockers and beta-blockers under medical supervision, usually in the emergency department to quickly reduce heart rate before transitioning a patient back to oral therapy.

The “pill-in-pocket” anti-arrhythmic strategy is described by the AHA and ACC guidelines as the utilization of an oral dose of flecainide or propafenone as an attempt to restore sinus rhythm shortly after the onset of symptomatic atrial fibrillation. Neither drug referenced in the guideline is approved by any regulatory agency for the use outlined in the guideline. Pill-in-pocket rhythm control strategies are considered by physicians for patients who demonstrate favorable outcomes to these medications in the clinic and who are thought to be reliable enough to administer them appropriately. Initial administration of pill-in-pocket medication is recommended in a monitorable setting due to potential AV node dysfunction or a proarrhythmic response and may be preceded by beta-blocker or calcium channel blocker therapy if the patient is not chronically rate controlled.

Rate controlling agents (for example, calcium channel blockers and beta blockers) may also be administered acutely on an as needed (or PRN) basis. Though the AHA and ACC guidelines do not explicitly acknowledge this approach, participants in market research conducted by us indicate a significant share of patients are managed this way. PRN rate control is more prominently used in paroxysmal patients who do not tolerate chronic medications but experience symptomatic, infrequent atrial fibrillation episodes. Our patient market research from 2018 estimated that approximately 40% of patients use an additional rate control medication to manage acute symptoms of atrial fibrillation. Additionally, our physician market research commissioned in 2021 suggests that both clinical/interventional cardiologists and electrophysiologists prescribe PRN rate control for some of their paroxysmal and persistent patients.

Market Opportunity – Atrial Fibrillation with Rapid Ventricular Rate

The American Heart Association estimates that in 2016 approximately five million people suffered from AFib in the United States. This estimate is projected to increase over the next ten years; the AHA suggests a prevalence of 12 million by 2030, while the Centers for Disease Control (CDC) reports this prevalence as increasing to 12.1 million over the same time period, representing an approximately 6% annual growth rate. From market research with treating physicians, we estimate that approximately 40% of these patients have paroxysmal AFib, 30% have persistent AFib, and 30% have permanent AFib. Acute episodes of symptomatic AFib are often treated with the approaches described above. However, due to the concerning nature of AFib symptoms, patients often present to the emergency department. In the ED, patients are treated with IV calcium channel blockers or beta-blockers to quickly reduce heart rate and/or anti-arrhythmic or electrical cardioversion before transitioning a patient back to oral therapy. According to the Healthcare and Utilization Project, 660,000 patient visits to the emergency department in 2016 were attributed to AFib (ICD-10 diagnosis codes I48.0, I48.1, I48.2, I48.91). Additionally, approximately 465,000 patients were admitted to the hospital with AFib (same ICD-10 codes). Our qualitative and quantitative market research indicates that the target addressable market for etripamil in patients with AFib-RVR is approximately 30-40% of the diagnosed population of patients with atrial fibrillation. We derive this percentage estimate from 2021 market research studies conducted by us that involved qualitative interviews and quantitative surveys that included a total of 275 electrophysiologists, general cardiologists, and interventional cardiologists. The physicians in the two studies were asked to estimate the share of patients experiencing ≥ 1 symptomatic episode of AFib-RVR requiring treatment per year. In response, physicians in the quantitative survey reported approximately 40% of paroxysmal patients, 40% of persistent patients, and 30% of permanent patients met this classification. This research suggests the share of patients experiencing ≥ 1 symptomatic episode of AFib requiring treatment may constitute 30-40% of the prevalent AFib population on a weighted average basis.

We believe that etripamil has the potential to be developed such that it can be used by patients to rapidly reduce their heart rate at home to provide a supplemental option to the acute oral rate or rhythm control strategy their physician would use. When presented with a target product profile reflecting this potential use case, approximately two thirds of the physicians in the 2021 market research study perceived utility in the product profile, which could serve as a “bridge” to the onset of acute oral agents. According to physicians, it can take hours for patients to feel an alleviation of symptoms using acute oral rate and rhythm control. During this time, patients may experience concerning symptoms that often prompt them to seek emergency care. We believe that the combination of convenient delivery, potency, rapid onset

and short duration of action of etripamil has the potential to move the current treatment setting for some acute episodes of AFib out of the burdensome and costly emergency department.

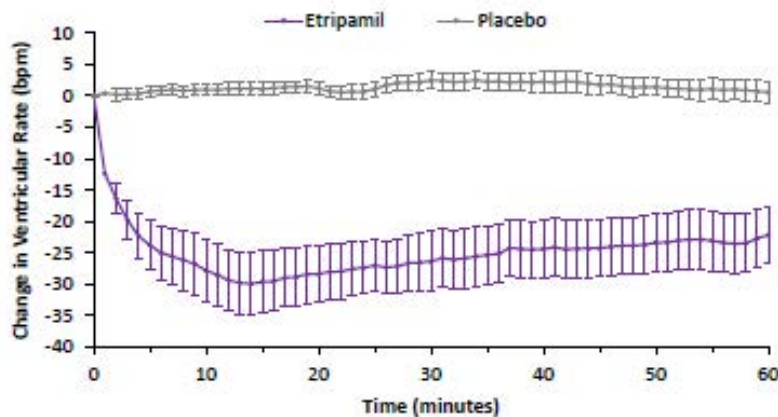
Current AFib management consumes significant healthcare resources in the United States. The American Heart Association published a report in 2016 summarizing the current and projected cost burden of cardiovascular diseases in the United States. This report suggests atrial fibrillation resulted in \$25 billion in direct medical costs in 2016 (approximately 7% of all cardiovascular diseases) and another \$7 billion in indirect costs (i.e., \$32 billion in total costs). Additionally, the forecasted growth in atrial fibrillation prevalence is anticipated to result in healthcare expenditures of \$46 billion in direct costs and \$10 billion in indirect costs in the United States by 2030.

Clinical Development Plan for Atrial Fibrillation with Rapid Ventricular Rate

The Phase 2, double-blind, placebo-controlled, study, Reduction of Ventricular Rate in Patients with Atrial Fibrillation (ReVeRA), in patients with AFib-RVR, was conducted in Canada and the Netherlands in collaboration with the Montreal Heart Institute, the WCN network, and other research centers. We began enrollment in ReVeRA in the first quarter of 2021 to evaluate the potential effectiveness of etripamil to reduce ventricular rate in patients with atrial fibrillation and rapid ventricular rate. The randomized, placebo-controlled Phase 2 ReVeRA trial enrolled 87 patients aged 18 years and older with symptomatic AFib, and dosed 56 patients with blinded study drug. Patients exhibited a ventricular rate of 110 or more beats per minute (bpm) prior to receiving study drug (etripamil nasal spray or placebo NS). The trial was designed to assess the reduction in ventricular rate (primary endpoint), the time to achieve maximum reduction in ventricular rate, duration of effect, and patient satisfaction with treatment using TSQM-9 patient reported outcome, or PRO, tool (key secondary endpoints).

Data from ReVeRA trial showed that delivery of etripamil nasal spray significantly and rapidly reduced ventricular rate, with a time course consistent with the drug's pharmacologic profile.

ReVeRA – Reduction in VR with Etripamil NS (70 mg) vs. Placebo NS



NS = Nasal Spray; bpm = beats per minute

Note: Data plotted on time course are not those directly used for calculation of Primary Endpoint (by pre-specified plan). X-axis of plot: time following drug administration; Y-axis: 5-min moving average, bpm \pm SEM. ¹ Efficacy Population (all randomized patients receiving study drug remaining in atrial fibrillation with adequately diagnostic ECG recordings for at least 60 min post drug)

² By ANCOVA. Source: American Heart Association Scientific Sessions, Featured Science Presentation, Nov. 2023; and Circulation: Arrhythmia & EP (Nov. 2023)

Etripamil achieved the primary endpoint with high statistical significance with patients experiencing a ventricular rate reduction of 29.91 bpm (95% confidence interval: -40.31, -19.52; p<0.0001) in the etripamil arm compared to placebo. The maximum reduction in rate reported by a patient taking etripamil was 34.97 bpm. The median time to maximum reduction in VR was 13 minutes in patients taking etripamil, and the duration of effect (reduction in VR from baseline) was at least 150 min. The median duration of maintaining a VR <100 bpm was 45.5 min in the first 60 min following drug in the etripamil arm.

ReVeRA Primary Endpoint – Maximum Reduction in Ventricular Rate from Baseline

PRIMARY ENDPOINT: Maximum Reduction in VR from Baseline	Placebo NS, N=25¹	Etripamil NS, 70 mg, N=24¹
Mean (95% CI), bpm	-5.06 (-7.44, -2.67)	-34.97 (-45.13, -24.87)
Difference in means (95% CI), bpm	--	-29.91 (-40.31, -19.52)
p-value²	--	<0.0001

¹ Efficacy population (all randomized patients receiving study drug remaining in atrial fibrillation with adequately diagnostic ECG recordings for at least 60 min post drug)

² From ANCOVA; calculations adjust for variance in baseline

Bpm = beats per minute, CI = confidence interval, NS = nasal spray, VR = ventricular rate

A greater number of patients taking etripamil achieved a ventricular rate of less than 100 bpm (58.3%) than those taking placebo (4%). Furthermore, 67% of patients taking etripamil achieved ventricular rate reductions of more than 20% and 96% of patients receiving etripamil achieved more than 10% in ventricular rate reductions in the first 60 minutes compared to 0% and 20% in patients taking placebo, respectively. Etripamil treatment was associated with significant improvement in symptom relief and in treatment satisfaction as measured by the TSQM-9 patient-reported outcome instrument.

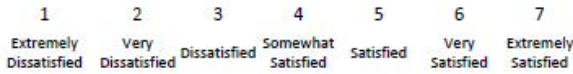
Using the TSQM-9, compared to placebo, patients treated with etripamil demonstrated significant improvements in satisfaction ratings in the effectiveness domain (p<0.0001). As well, patient reported outcomes on the Relief of Symptoms Question from the Effectiveness Domain showed statistically significant greater scores (greater satisfaction) with a p = 0.0002 for patients treated with etripamil compared to those treated with placebo, and with a treatment effect (delta) of 1.55 units.

ReVeRA Study: TSQM-9 PRO¹ Assessment & Results

ReVeRA Data Show Significant Improvement in Patient-Reported Relief of Symptoms

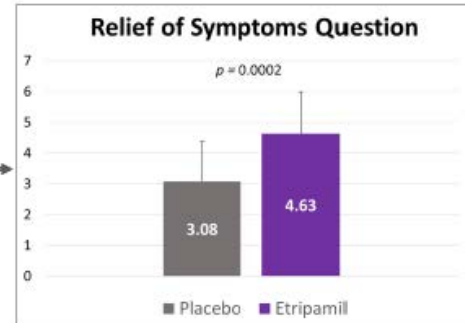


- TSQM-9 PRO² includes an Effectiveness Domain
- Domain includes three questions, each answered on 7-point anchored scale



- The domain score is calculated from its three question scores
 - Domain score is on a 0 to 100-point scale
 - Domain score of 50/100 corresponds to a 4/7 = “Somewhat Satisfied”

	Placebo ² N=25	Etripamil ² N=24	p value ³
Effectiveness Domain Scores, mean (SD)	36.67 (21.64)	62.69 (21.59)	p<0.0001



¹ Treatment Satisfaction Questionnaire for Medication-9, a validated Patient-Reported Outcome tool. ² Efficacy Population (all randomized patients receiving study drug remaining in atrial fibrillation with adequately diagnostic ECG recordings for at least 60 min post drug). ³ From t-test. Source: American Heart Association Scientific Sessions, Featured Science Presentation, Nov. 2023; and *Circulation: Arrhythmia & EP* (Nov. 2023)

In ReVeRA, safety and tolerability reported in the 56-patient safety population who received etripamil was generally consistent with that observed in our PSVT program. Treatment-emergent serious adverse events, or TESAEs, were rare, with two occurring in one patient in the etripamil arm (3.7%) and four occurring in two patients in the placebo arm (6.9%). The TESAEs in the etripamil arm (transient severe bradycardia and syncope, assessed as due to hyper-vagotonia occurred in a patient with a history of vagal events, and fully resolved by placing the patient supine and was without sequelae. The majority of common AEs were localized to the drug-administration site, and there was a low incidence of serious adverse events. The most common ($\geq 5\%$) adverse events were mild or moderate in intensity and included nasal discomfort, rhinorrhea, increased lacrimation, throat irritation and dizziness.

In mid-2023, we held a pre-IND meeting with FDA and received guidance indicating a potential development path for etripamil in AFib-RVR. The FDA agreed that to gain a labelled indication via supplemental NDA, or sNDA, a Phase 3, randomized, placebo controlled, double blind clinical trial using a dosing regimen with self-administration of etripamil in an at-home setting could be acceptable with the support of the already existing safety database from our PSVT trials. The primary endpoint can be the reduction of ventricular rate, and the primary analysis would be on the intent to treat, or ITT, population. In addition, the study would have to show statistical significance ($p<0.05$) on the key secondary endpoint of symptom relief as a patient benefit, also in the ITT population. The secondary endpoint could use a PRO measure and the application of a 7-point anchored scale was discussed with the FDA. In the first quarter of 2024, we met with the FDA in a Type A meeting. In this meeting we confirmed prior FDA guidance on a single-study sNDA pathway. FDA further concurred with respect to key study elements including powering, inclusion criteria, patient population, and statistical analyses, and offered clarification with respect to the endpoints to guide the design of the Phase 3 study. We anticipate progressing to an End of Phase 2 meeting in mid-2024 as an important step to finalize the registrational study protocol.

Etripamil in Other Therapeutic Applications

Our goal in expanding our pipeline around etripamil is to apply the same paradigm-changing aspiration that we have for supraventricular tachycardias like PSVT and AFib-RVR to other cardiac and potentially non-cardiac conditions where we believe that a rapid-onset dihydropyridine L-type calcium channel blocker could potentially deliver significant clinical and quality of life benefits for patients. We believe that the insights that led to the development of etripamil for the treatment of PSVT are relevant in other indications where AV-nodal blocking agents with blood vessel widening activity have

demonstrated clinical utility. Both calcium channel blockers and beta blockers are commonly used to manage supraventricular tachycardias like PSVT or AFib-RVR, and other conditions.

Sales and Marketing

Given our stage of development, we have commercialization plans but have not yet established a commercial organization or distribution capabilities. If etripamil receives marketing approval, we plan to commercialize it in the United States leveraging industry trends regarding staged deployment of resources, digital/omnichannel investments, and a focused, specialty sales force that could consist of our own employees, outsourced sales professionals, or a hybrid model using both internal and external resources. We believe that this commercial organization at the launch of etripamil will consist of a field force of <100 individuals calling on primarily clinical cardiologists who treat large populations of patients with PSVT, supported by strategic investments in digital and targeted non-personal promotion. As we establish reimbursement for etripamil with commercial and Medicare payors, we anticipate that this investment in omnichannel promotion will grow, targeting both prescribers and patients. Aligned to this expansion, our field force could grow to 150 to 200 field sales representatives calling on top-prescribing clinical cardiologists, interventional cardiologists, electrophysiologists, and high-volume primary care physicians who have a history of prescribing cardiovascular therapies. We believe an organization of this size would allow us to reach prescribers that collectively care for a substantial portion of patients diagnosed with PSVT in the United States. Given the importance of increasing awareness and educating patients with PSVT, we also anticipate deploying focused direct-to-patient marketing campaigns for etripamil. We anticipate that our sales force could also support the commercialization of additional product candidates treating cardiovascular diseases. We would expect to conduct the initial buildout of our commercial organization following NDA submission for etripamil. At this time, we may pursue and believe that we can maximize the value of etripamil by retaining commercialization rights in the United States and entering into collaboration agreements for certain territories outside the United States, including the European Union.

Manufacturing

We currently rely on third party contract manufacturing organizations, or CMOs, for all of our required raw materials, nasal spray device, active pharmaceutical ingredient, or API, and finished product for our clinical trials and for our preclinical research. We require all of our CMOs to conduct manufacturing activities in compliance with current good manufacturing practice, or cGMP, requirements. We have assembled a team of experienced employees and consultants to provide the necessary technical, quality and regulatory oversight over our CMOs and have implemented a comprehensive plan for audits of our CMOs. Currently, we have development contracts and quality agreements with our CMOs for the manufacturing of etripamil drug substance and drug product. We currently have enough manufactured supply of etripamil to complete our ongoing registration trials. We also may elect to pursue additional CMOs for manufacturing supplies of regulatory starting materials in the future and for the filling of the nasal spray device, labeling, packaging, storage and distribution of investigational drug products. We plan to continue to rely on third party manufacturers for any future trials and commercialization of etripamil, if approved. We anticipate that these CMOs will have capacity to support commercial scale production, but we do not have any formal agreements at this time with these CMOs to cover commercial production. If etripamil is approved by any regulatory agency, we intend to enter into agreements with a third-party contract manufacturer and one or more backup manufacturers for the commercial production of etripamil.

Competition

Drug development is highly competitive and subject to rapid and significant technological advancements. Our ability to compete will significantly depend upon our ability to complete necessary clinical trials and regulatory approval processes, and effectively market any drug that we may successfully develop. Our current and potential future competitors include pharmaceutical and biotechnology companies, academic institutions and government agencies. The primary competitive factors that will affect the commercial success of etripamil or any other product candidate for which we may receive marketing approval, include differentiation of any competitor's product regarding efficacy, safety, tolerability, dosing convenience, price, coverage and reimbursement. A number of our potential competitors have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of product candidates, as well as in obtaining regulatory approvals and commercializing those product candidates in the

United States and in foreign countries. It is also possible that a competitor may develop a cure or more effective treatment method for the diseases we are targeting, which could render our current or future product candidates non-competitive or obsolete, or reduce the demand for our product candidates before we can recover our development and commercialization expenses.

We are not aware of any approved drug or any drug candidate in clinical development for a patient with PSVT to self-administer treatment to terminate SVT episodes. In the acute setting, IV treatments of generic drugs such as adenosine, verapamil and diltiazem, are routinely given. Additionally, some practitioners prescribe oral medications, such as calcium channel blockers, beta blockers and antiarrhythmics to be taken at the onset of an episode. However, these interventions are not acutely effective and are not approved by the FDA or other regulatory agencies for this use.

For atrial fibrillation, there are a number of marketed generic antiarrhythmic drugs that are used for chronic and/or acute rate control, such as metoprolol, propranolol, esmolol, pindolol, atenolol, nadolol, verapamil and diltiazem. We are aware of several drugs or new formulations of existing drugs under development or recently under development for atrial fibrillation, including InRhythm (flecainide), a sodium channel blocker in Phase 3 from InCarda Therapeutics, Inc., and an IV and potentially oral small-molecule SK channel inhibitor being developed by Acesion Pharma for acute conversion and chronic maintenance of sinus rhythm, respectively, in patients with AFib. Acesion's lead asset, AAP30663, is the IV-formulated short acting AFib conversion therapy for hospital use that has successfully completed a Phase 2 trial.

Intellectual Property

We have filed numerous patent applications pertaining to etripamil and possible future product candidates, formulations containing etripamil, methods of making such formulations and clinical use. We strive to protect and enhance the proprietary technology, invention and improvements that are commercially important to the development of our business by seeking, maintaining, and defending our intellectual property. We also rely on know-how, continuing technological innovation and potential in-licensing opportunities to develop, strengthen and maintain our position in the field of cardiac arrhythmias, such as PSVT, and immediate rate control in atrial fibrillation, as well as other medical conditions affecting the cardiovascular system. Additionally, we intend to rely on regulatory protection afforded through data exclusivity and market exclusivity, as well as patent term extensions, where available.

As of December 31, 2023, our patent portfolio as it pertains to etripamil included:

- a patent family containing six U.S. patents, projected to expire in 2028, a pending U.S. patent application, which, if granted, is projected to expire in 2028, as well as corresponding patents in Australia, Brazil, Canada, China, Europe, Hong Kong, India, Japan, Mexico, New Zealand and South Korea, directed to etripamil, pharmaceutical compositions including etripamil, and uses of etripamil such as to treat cardiac arrhythmias, including PSVT and atrial fibrillation; and
- a patent family containing one U.S. patent, projected to expire in 2036, a pending U.S. patent application, which, if granted, is projected to expire in 2036, as well as corresponding patents in Australia, Brazil, Canada, China, Europe, Hong Kong, Israel, Japan, Mexico, Russia, South Africa, and Ukraine and corresponding patent applications in China, Europe, Hong Kong, India, New Zealand, South Africa, and South Korea, directed to formulations including etripamil, methods of making such formulations, and uses of such formulations to treat cardiac arrhythmias, such as PSVT and atrial fibrillation.
- a patent family containing pending applications in the United States, Canada, and Europe, which, if granted, is projected to expire in 2041, directed to uses of formulations including etripamil to treat cardiac arrhythmias, such as PSVT and atrial fibrillation, or migraines.

The terms of individual patents may vary based on the countries in which they are obtained. Generally, patents issued for applications filed in the United States are effective for 20 years from the earliest effective non-provisional filing date in the absence, for example, of a terminal disclaimer shortening the term of the patent or patent term adjustment increasing the term of the patent. In addition, in certain instances, a patent term can be extended to recapture a portion of the term

effectively lost as a result of FDA regulatory review periods. The restoration period cannot be longer than five years and the total term, including the restoration period, must not exceed 14 years following FDA approval. The duration of patents outside the United States varies in accordance with provisions of applicable local law, but typically is also 20 years from the earliest non-provisional filing date.

In addition to patents and patent applications that we own, we rely on know-how to develop and maintain our competitive position. We seek to protect our proprietary technology and processes, and obtain and maintain ownership of certain technologies, in part, through confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors, contractors and commercial partners.

Our future commercial success depends, in part, on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business; defend and enforce our patents; and operate without infringing valid enforceable patents and proprietary rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell or importing our products may depend on the extent to which we have rights under valid and enforceable patents that cover these activities. With respect to our owned intellectual property, we cannot be sure that patents will issue from any of the pending patent applications which we own or from any patent applications that we may file in the future, nor can we be sure that any patents that may be issued in the future to us will be commercially useful in protecting etripamil or any future product candidates and methods of using or manufacturing the same. Moreover, we may be unable to obtain patent protection for certain aspects of etripamil or future product candidates generally, as well as with respect to certain indications. See the section entitled “Risk Factors—Risks Related to Our Intellectual Property” for a more comprehensive description of risks related to our intellectual property.

Government Regulation and Product Approval

Government authorities in the United States, at the federal, state and local levels, and in other countries, extensively regulate, among other things, the research, development, testing, manufacture, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import and export of pharmaceutical products, such as those we are developing. The processes for obtaining regulatory approvals in the United States and in foreign countries, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

United States Government Regulation

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable United States requirements at any time during the drug development process, approval process or after approval, may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA’s refusal to approve an NDA, withdrawal of an approval, imposition of a clinical hold, issuance of warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties.

The process required by the FDA before a drug may be marketed in the United States generally involves:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA’s good laboratory practice, or GLP, regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, at each clinical site before each trial may be initiated;

- performance of adequate and well controlled clinical trials, in accordance with good clinical practice, or GCP, requirements to establish the safety and efficacy of the proposed drug for each indication;
- submission to the FDA of an NDA;
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with cGMP requirements, and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- satisfactory completion of an FDA inspection of selected clinical sites to assure compliance with GCPs and the integrity of the clinical data;
- payment of user fees; and
- FDA review and approval of the NDA.

Preclinical Studies

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. An IND sponsor must submit the results of the nonclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some nonclinical testing may continue even after the IND is submitted. 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 clinical trial on a clinical hold.

In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

Clinical Trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must continue to oversee the clinical trial while it is being conducted. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their ClinicalTrials.gov website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined. In Phase 1, the drug is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an initial indication of its effectiveness. In Phase 2, the drug typically is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage. In Phase 3, the drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well controlled clinical trials to generate enough data to statistically evaluate the safety and efficacy of the product for approval, to establish the overall risk benefit profile of the product and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted, at least annually, to the FDA, and more frequently if serious adverse events occur. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, 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 clinical trial is not being conducted in accordance with the IRB's requirements, or if the drug has been associated with unexpected serious harm to patients.

Marketing Approval

Assuming successful completion of the required clinical testing, the results of the preclinical and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act, or PDUFA, guidelines that are currently in effect, the FDA has a goal of ten months from the date of "filing" of a standard NDA for a new molecular entity to review and act on the submission. This review typically takes twelve months from the date the NDA is submitted to the FDA because the FDA has approximately two months to make a "filing" decision.

In addition, under the Pediatric Research Equity Act, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, plan to ensure that the benefits of the drug outweigh its risks. The REMS plan could include medication guides, physician communication plans, assessment plans, and/or elements to assure safe use, such as restricted distribution methods, patient registries or other risk minimization tools.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

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

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

The testing and approval process for an NDA requires substantial time, effort and financial resources, and takes several years to complete. Data obtained from preclinical and clinical testing are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA may not grant approval of an NDA on a timely basis, or at all.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing in order for FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Post Approval Requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications, manufacturing changes or other labeling claims, are subject to further testing requirements and prior FDA review and approval. There also are continuing annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as application fees for supplemental applications with clinical data.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, including a boxed warning, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label, although physicians, based on their independent medical judgement, may prescribe approved drugs for unapproved indications. However, biopharmaceutical companies may share truthful and not misleading information that is otherwise consistent with the labeling. The FDA and other agencies actively enforce the laws and regulations prohibiting their promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant civil, criminal and administrative liability.

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

Federal and State Fraud and Abuse, Data Privacy and Security, and Transparency Laws and Regulations

In addition to FDA restrictions on marketing of pharmaceutical products, federal and state healthcare laws and regulations restrict business practices in the biopharmaceutical industry. These laws may impact, among other things, our current and future business operations, including our clinical research activities, and proposed sales, marketing and education programs and constrain the business or financial arrangements and relationships with healthcare providers and other parties through which we market, sell and distribute our products for which we obtain marketing approval. These laws include anti-kickback and false claims laws and regulations, data privacy and security, and transparency laws and regulations, including, without limitation, those laws described below.

The federal Anti-Kickback Statute prohibits any person or entity from, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term “remuneration” has been broadly interpreted to include anything of value. The federal Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Several courts have interpreted the statute’s intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute has been violated.

A person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act or the civil monetary penalties laws.

Federal civil and criminal false claims laws, including the federal civil False Claims Act, which can be enforced by individuals through civil whistleblower and qui tam actions, and civil monetary penalties laws, prohibits any person or entity from, among other things, knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes “any request or demand” for money or property presented to the U.S. government. Several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies’ marketing of products for unapproved, and thus non-reimbursable, uses.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Also, many states have similar fraud and abuse statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their respective implementing regulations, impose specified requirements on certain types of individuals and entities relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA’s security standards directly applicable to “business associates,” defined as independent contractors or agents of covered entities, which include certain healthcare providers, healthcare clearinghouse and health plans, that create, receive, maintain or transmit individually identifiable health information in connection with providing a service for or on behalf of a covered entity, and their covered subcontractors. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce HIPAA and seek attorney’s fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which are not pre-empted by HIPAA, differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

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

We may also be subject to state laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, state 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, state laws that require drug manufacturers to report information on the pricing of certain drugs, and state and local laws that require the registration of pharmaceutical sales representatives.

Because of the breadth of these laws and the narrowness of available statutory exceptions and regulatory safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the federal and state laws described above or any other governmental

regulations that apply to us, we may be subject to significant criminal, civil and administrative penalties including damages, fines, imprisonment, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm, diminished profits and future earnings, disgorgement, exclusion from participation in government healthcare programs and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. To the extent that any of our products are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, implementation of corporate compliance programs, reporting of payments or transfers of value to healthcare professionals, and additional data privacy and security requirements.

Coverage and Reimbursement

The future commercial success of our, or any of our collaborators', product candidates, if approved, will depend in part on the extent to which third-party payors, such as governmental payor programs at the federal and state levels, including Medicare and Medicaid, private health insurers and other third-party payors, provide coverage of and establish adequate reimbursement levels for our product candidates. Third-party payors generally decide which products they will pay for and establish reimbursement levels for those products. In particular, in the United States, no uniform policy for coverage and reimbursement exists. Private health insurers and other third-party payors often provide coverage and reimbursement for products based on the level at which the government, through the Medicare program, provides coverage and reimbursement for such products, but also have their own methods and approval process apart from Medicare determinations. Therefore, coverage and reimbursement can differ significantly from payor to payor.

In the United States, the European Union, or EU, and other potentially significant markets for our product candidates, government authorities and third-party payors are increasingly attempting to limit or regulate the price of products, particularly for new and innovative products, which often has resulted in average selling prices lower than they would otherwise be. Further, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the EU will put additional pressure on product pricing, reimbursement and usage. These pressures can arise from rules and practices of managed care groups, judicial decisions and laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical coverage and reimbursement policies and pricing in general.

Third-party payors are increasingly imposing additional requirements and restrictions on coverage and limiting reimbursement levels for products. For example, federal and state governments reimburse products at varying rates generally below average wholesale price. These restrictions and limitations influence the purchase of products. Third-party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the FDA-approved products for a particular indication. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of products, in addition to their safety and efficacy. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our product candidates, in addition to the costs required to obtain the FDA approvals. Our product candidates may not be considered medically necessary or cost-effective. A payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Adequate third-party payor reimbursement may not be available to enable us to realize an appropriate return on our investment in product development. Legislative proposals to reform healthcare or reduce costs under government insurance programs may result in lower reimbursement for our product candidates, if approved, or exclusion of our product candidates from coverage and reimbursement. The cost containment measures that third-party payors and providers are instituting and any healthcare reform could significantly reduce our revenues from the sale of any approved product candidates. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Healthcare Reform

The United States and some foreign jurisdictions are considering enacting or have enacted a number of additional legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our product candidates profitably, if approved. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts, which include major legislative initiatives to reduce the cost of care through changes in the healthcare system, including limits on the pricing, coverage, and reimbursement of pharmaceutical and biopharmaceutical products, especially under government-funded health care programs, and increased governmental control of drug pricing.

There have been several U.S. government initiatives over the past few years to fund and incentivize certain comparative effectiveness research, including creation of the Patient-Centered Outcomes Research Institute under the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively the PPACA. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's product could adversely affect the sales of our product candidates.

The PPACA became law in March 2010 and substantially changed the way healthcare is financed by both third-party payors. Among other measures that may have an impact on our business, the PPACA establishes an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents; a new Medicare Part D coverage gap discount program; and a new formula that increases the rebates a manufacturer must pay under the Medicaid Drug Rebate Program. Additionally, the PPACA extends manufacturers' Medicaid rebate liability, expands eligibility criteria for Medicaid programs, and expands entities eligible for discounts under the Public Health Service Act.

There have been executive, judicial and Congressional challenges to certain aspects of the PPACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the PPACA have been signed into law. The Tax Cuts and Jobs Act of 2017, or Tax Act, included a provision that repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the PPACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." In addition, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the PPACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminated the health insurer tax. The Bipartisan Budget Act of 2018, or the BBA, among other things, amended the PPACA, effective January 1, 2019, to increase from 50% to 70% the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." On June 17, 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the PPACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Moreover, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the PPACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the PPACA. Further, on August 16, 2022, President Biden signed the Inflation Reduction Act of 2022, or IRA, into law, which among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in PPACA marketplaces through plan year 2025. The IRA also eliminates the "donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and through a newly established manufacturer discount program. It is possible that the PPACA will be subject to judicial or Congressional challenges in the future. It is unclear how additional healthcare reform measures of the Biden administration will impact the PPACA.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. In August 2011, the President signed into law the Budget Control Act of 2011, as amended, which, among other things, included aggregate reductions to Medicare payments to providers of 2% per fiscal year, which began in 2013 and, following passage of subsequent legislation, will continue until 2032 unless additional Congressional action is taken. Additionally, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid

drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. In January 2013, the American Taxpayer Relief Act of 2012 was enacted and, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Further, there has been increasing legislative and enforcement interest in the United States with respect to drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. For example, in July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, the Department of Health and Human Services, or HHS, released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue as well as potential administrative actions HHS can take to advance these principles. In addition, the IRA, among other things (i) directs HHS to negotiate the price of certain single-source drugs and biologics covered under Medicare and (ii) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions take effect progressively starting in fiscal year 2023. On August 29, 2023, HHS announced the list of the first ten drugs that will be subject to price negotiations, although the Medicare drug price negotiation program is currently subject to legal challenges. It is currently unclear how the IRA will be implemented but is likely to have a significant impact on the pharmaceutical industry. In response to the Biden administration's October 2022 executive order, on February 14, 2023, HHS released a report outlining three new models for testing by the CMS Innovation Center which will be evaluated on their ability to lower the cost of drugs, promote accessibility, and improve quality of care. It is unclear whether the models will be utilized in any health reform measures in the future. Further, on December 7, 2023, the Biden administration announced an initiative to control the price of prescription drugs through the use of march-in rights under the Bayh-Dole Act. On December 8, 2023, the National Institute of Standards and Technology published for comment a Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights which for the first time includes the price of a product as one factor an agency can use when deciding to exercise march-in rights. While march-in rights have not previously been exercised, it is uncertain if that will continue under the new framework. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. For example, on January 5, 2024, the FDA approved Florida's Section 804 Importation Program, or SIP, proposal to import certain drugs from Canada for specific state healthcare programs. It is unclear how this program will be implemented, including which drugs will be chosen, and whether it will be subject to legal challenges in the United States or Canada. Other states have also submitted SIP proposals that are pending review by the FDA. Any such approved importation plans, when implemented, may result in lower drug prices for products covered by those programs.

Foreign Regulation

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of our product candidates. For example, in the EU, we must obtain authorization of a clinical trial application, or CTA, in each member state in which we intend to conduct a clinical trial. Whether or not we obtain FDA approval for a drug, we would need to obtain the necessary approvals by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the drug in those countries. The approval process varies from country to country and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may negatively impact the regulatory process in others.

Employees and Human Capital

Patients inspire all we do. Milestone employees are passionate about creating a solution for patients who suffer from PSVT and other related illness as we work together on our mission to develop innovative cardiovascular medicines. We have built a culture of high performance based on our core values:

- *Patients First:* Everything we do is with the patient in mind. We listen to and partner with patients and place their well-being at the core of all our initiatives.
Our patients inspire us.
- *Teamwork:* Milestone employees support, challenge and care for each other. Employees engage with one another through their teams, but also through our weekly gatherings, outings and friendly competitions and challenges.
Collaboration is key.
- *Entrepreneurial Mindset:* Milestone places a high value on grit, courage and resolve. Milestone's organizational energy has the sense of a startup.
Employees are encouraged to think like an owner.
- *Every Idea Matters:* Sometimes the best ideas evolve from where it is least expected.
All ideas are welcome.
- *Humility, Empathy and Integrity:* We act individually and as a team with these three attributes in mind in all we do.
We care to do what is right.

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

As of December 31, 2023, we had 47 full-time employees, 11 of whom were primarily engaged in research and development activities. Five of these employees have an M.D. or Ph.D. degree. None of our employees is represented by a labor union and we consider our employee relations to be excellent.

In the first quarter of 2024, we underwent a reduction in force resulting in 27 full-time employees remaining with the Company.

Facilities

Our headquarters is currently located in Montréal (Québec), Canada and consists of 7,700 square feet of leased office space under a lease that expires in November 2025. We also have a U.S. subsidiary in Charlotte, North Carolina that occupies 13,050 square feet of leased office space under a lease that expires in September 2027.

Legal Proceedings

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. We are not currently a party to any material legal proceedings, and we are not aware of any pending or threatened legal proceeding against us that we believe could have an adverse effect on our business, operating results or financial condition.

Corporate Information

Our principal executive offices are located at 1111 Dr. Frederik-Philips Blvd., Suite 420, Montréal, Québec, Canada H4M 2X6, and our telephone number is (514) 336-0444. Our US offices are located at 6210 Ardrey Kell Rd, Suite 650, Charlotte, NC 28277 and our telephone number is (704) 848-5316.

Available Information

We maintain an internet website at www.milestonepharma.com and make available free of charge through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Exchange Act of 1934, or the Exchange Act. We make these reports available through our website as soon as reasonably practicable after we electronically file such reports with, or furnish such reports to, the Securities and Exchange Commission (“SEC”). You can review our electronically filed reports and other information that we file with the SEC on the SEC’s website at <http://www.sec.gov>. We also make available, free of charge on our website, the reports filed with the SEC by our executive officers, directors and 10% stockholders pursuant to Section 16 under the Exchange Act as soon as reasonably practicable after copies of those filings are provided to us by those persons. In addition, we regularly use our website to post information regarding our business, product development programs and governance, and we encourage investors to use our website, particularly the information in the section entitled “Investors,” as a source of information about us.

The information on our website is not incorporated by reference into this Annual Report on Form 10-K and should not be considered to be a part of this Annual Report on Form 10-K. Our website address is included in this Annual Report on Form 10-K as an inactive technical reference only.

Investors and others should note that we announce material information to our investors using one or more of the following: SEC filings, press releases and our corporate website, including without limitation the “Investors” and “Events and Presentations” sections of our website. We use these channels, as well as social media channels such as LinkedIn, in order to achieve broad, non-exclusionary distribution of information to the public and for complying with our disclosure obligations under Regulation FD. It is possible that the information we post on our corporate website or other social media could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in our Company to review the information we post on the “Investors” and “Events and Presentations” sections of our corporate website and on our social media channels. The contents of our corporate website and social media channels are not, however, a part of this Annual Report.

ITEM 1A. RISK FACTORS

An investment in shares of our common shares involves a high degree of risk. You should carefully consider the following information about these risks, together with the other information appearing elsewhere in this Annual Report on Form 10-K, consolidated financial statements and related notes thereto and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” before deciding to invest in our common shares. The occurrence of any of the following risks could have a material adverse effect on our business, financial condition, results of operations and future growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. In these circumstances, the market price of our common shares could decline, and you may lose all or part of your investment. We cannot assure you that any of the events discussed below will not occur.

Risks Related to Our Financial Position and Capital Needs

We have incurred significant operating losses since inception and anticipate that we will continue to incur substantial operating losses for the foreseeable future and may never achieve or maintain profitability.

Since inception in 2003, we have incurred significant operating losses. Our net loss was \$60.0 million and \$58.4 million for the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, we had an accumulated deficit of \$326.0 million. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. Since inception, we have devoted substantially all of our efforts to research and preclinical and clinical development of etripamil, as well as to expanding our management team and infrastructure. It could be several years, if ever, before we have a commercialized drug. We expect that our existing cash and cash equivalents and short-term investments will be sufficient to fund our operations for at least the next 12 months from the date of issuance of this 10-K for the year ending December 31, 2023 and that there are no events or conditions that may cast substantial doubt on our ability to continue as a going concern for at least the next 12 months from the date of this filing.

The net losses we incur may fluctuate significantly from quarter to quarter and year to year. We anticipate that our expenses will increase if, and as, we:

- continue our ongoing and planned development of etripamil, including our clinical trials of etripamil for the treatment of PSVT and AFib-RVR;
- seek marketing approvals for etripamil for the treatment of PSVT, AFib-RVR and other cardiovascular indications;
- establish a sales, marketing, manufacturing and distribution capability, either directly or indirectly with third parties, to commercialize etripamil or any future product candidate for which we may obtain marketing approval;
- build a portfolio of product candidates through development, or the acquisition or in-license of drugs, product candidates or technologies;
- initiate preclinical studies and clinical trials for etripamil for any additional indications we may pursue, and for any additional product candidates that we may pursue in the future;
- maintain, protect and expand our intellectual property portfolio;
- hire additional clinical, regulatory and scientific personnel;
- add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts; and

- incur additional legal, insurance related, accounting and other expenses associated with operating as a public company.

To become and remain profitable, we must succeed in developing and eventually commercializing drugs that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing clinical trials of etripamil and any future product candidates that we may pursue, obtaining regulatory approval, procuring commercial-scale manufacturing, marketing and selling etripamil and any future products for which we may obtain regulatory approval, as well as discovering or acquiring and then developing additional product candidates. We are only in the preliminary stages of some of these activities. We may never succeed in these activities and, even if we do, may never generate revenues that are significant enough to achieve profitability.

Because of the numerous risks and uncertainties associated with drug development, we are unable to accurately predict the timing or amount of expenses or when, or if, we will be able to achieve profitability.

Our expenses could increase beyond our expectations if we are required by the U.S. Food and Drug Administration, or FDA, the European Medicines Agency or other regulatory authorities to perform studies in addition to those we currently expect, or if there are any delays in the initiation and completion of our clinical trials or the development of etripamil or any future product candidates.

For example, we received a refusal to file letter from the FDA for the NDA for self-administered etripamil nasal spray for the treatment of PSVT in December 2023. Upon preliminary review, the FDA determined that the NDA, submitted in October 2023, was not sufficiently complete to permit substantive review. In the refusal to file letter the FDA requested information about the time of data recorded for adverse events in our Phase 3 clinical trials. We held a Type A Meeting with FDA in February 2024. To align with FDA's guidance in preliminary response to our questions presented to the FDA in our Type A Meeting request, we will need to restructure the data sets that capture timing of reported AEs, reformat certain data files to facilitate FDA's analyses, and resubmit the NDA. We plan to resubmit the NDA for self-administered etripamil nasal spray for the treatment of PSVT in the second quarter of 2024. There is no guarantee that we will be able to resubmit the NDA on the expected timeline or that the FDA will accept the NDA for review following resubmission and, even if it does, there is no guarantee that the FDA will approve our NDA or, if approved, that we will ever generate sufficient revenue to achieve profitability.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our Company and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our common shares could also cause you to lose all or part of your investment.

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

We are a clinical-stage company founded in 2003, and our operations to date have been largely focused on raising capital, organizing, staffing our Company and undertaking preclinical studies and conducting clinical trials for etripamil. As an organization, we have not yet demonstrated an ability to successfully complete clinical development, 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 commercialization. Consequently, any predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successful clinical development and commercialization of products.

We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives. We will need to transition at some point from a company with a research and development focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

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

We will require substantial additional funding to finance our operations. If we are unable to raise capital when needed, we could be forced to delay, reduce or terminate our development of etripamil or other operations.

Based on our research and development plans, we expect that our existing cash and cash equivalents and short-term investments will be sufficient to fund our operations for at least the next 12 months from the date of issuance of this 10-K for the year ended December 31, 2023 and that there are no events or conditions that may cast substantial doubt on our ability to continue as a going concern for at least the next 12 months from the date of this filing. However, we will need to obtain substantial additional funding in connection with our continuing operations and planned activities. Our future capital requirements will depend on many factors, including:

- the timing, progress of NDA filing and results of our ongoing and planned clinical trials of etripamil in PSVT, AFib-RVR and in other indications;
- the scope, progress, results and costs of preclinical development, laboratory testing and clinical trials of etripamil for additional indications or any future product candidates that we may pursue;
- our ability to establish collaborations on favorable terms, if at all;
- the ability of vendors who we rely on to accurately forecast expenses and deliver on expectations;
- the costs, timing and outcome of regulatory review of etripamil and any future product candidates;
- the costs and timing of future commercialization activities, including product manufacturing, marketing, sales and distribution, for etripamil and any future product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of etripamil and any future product candidates for which we receive marketing approval;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims;
- the extent to which we acquire or in-license other product candidates and technologies; and
- the costs of operating as a public company.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. For example, our NODE-301 trial of etripamil for PSVT did not meet its primary endpoint. In addition, etripamil and any future product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of drugs that we do not expect to be commercially available for several years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all. We may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. In addition, we may not be able to access a portion of our existing cash, cash equivalents and investments due to market conditions. For example, on March 10, 2023, the Federal Deposit Insurance Corporation took control and was appointed receiver of Silicon Valley Bank. Similarly, on March 12, 2023, Signature Bank and Silvergate Capital Corp. were each swept into receivership. If other banks and financial institutions enter receivership or become insolvent in the future in response to financial conditions affecting the banking system and financial markets, our ability to access our existing cash, cash equivalents and investments may be threatened and could have a material adverse effect on our business and financial condition. Weakness and volatility in capital markets and the economy, in general or as a result of bank failures or macroeconomic conditions such as rising inflation, could limit our access to capital markets and increase our costs of borrowing. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or altogether terminate our research and development programs or future commercialization efforts.

Economic uncertainty, including related to inflation, may adversely affect our results of operations.

Our results of operations may be materially affected by global economic conditions, including inflation, which has recently increased at the fastest pace in nearly 40 years, sustained uncertainty regarding future economic conditions, prolonged tightening of credit markets and changes in tax rates. In recent years, the U.S. and other significant economic markets have experienced cyclical downturns, and worldwide economic conditions remain uncertain. While such uncertainty persists, investor concerns over inflation, market volatility, geopolitical tensions (such as Russia's incursion into Ukraine or the Israel-Hamas war) and public health crises (such as the COVID-19 pandemic) may cause deteriorating market conditions with adverse effects on our business, financial condition and operating results.

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

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through public or private equity or debt financings, third-party funding, marketing and distribution arrangements, as well as other collaborations, strategic alliances and licensing arrangements, or any combination of these approaches. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, such as the Convertible Notes (as defined herein), your ownership interest may be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a shareholder. Debt and equity financings, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as redeeming our shares, making investments, incurring additional debt, making capital expenditures, declaring dividends or placing limitations on our ability to acquire, sell or license intellectual property rights.

If we raise additional capital through future collaborations, strategic alliances or third-party licensing arrangements, we may have to relinquish valuable rights to our intellectual property, future revenue streams, research programs or product candidates, or grant licenses on terms that may not be favorable to us. If we are unable to raise additional capital when needed, we may be required to delay, limit, reduce or terminate our drug development or future commercialization efforts, or grant rights to develop and market product candidates that we would otherwise develop and market ourselves.

Our ability to use our non-capital loss carryforwards to offset future taxable income may be subject to certain limitations.

In general, where control of a corporation has been acquired by a person or group of persons, subsection 111(5) of the Income Tax Act (Canada), or the Canadian Tax Act, and equivalent provincial income tax legislation restrict the corporation's ability to carry forward non-capital losses from preceding taxation years. We have not performed a detailed analysis to determine whether an acquisition of control for the purposes of subsection 111(5) of the Canadian Tax Act has occurred after each of our previous issuances of common shares or preferred shares. In addition, if we undergo an acquisition of control, our ability to utilize non-capital losses could be limited by subsection 111(5) of the Canadian Tax Act. As of December 31, 2023, we had Canadian federal and provincial non-capital loss carry forwards of \$206.5 million and \$203.0 million, respectively, which expire beginning in 2026 through 2042. In addition, we also have scientific research and experimental development expenditures of \$26.5 million and \$31.8 million, respectively, for Canadian federal and provincial income tax purposes, which have not been deducted. These expenditures are available to reduce future taxable income and have an unlimited carry-forward period. Research and development tax credits and expenditures are subject to verification by the tax authorities, and, accordingly, these amounts may vary. Future changes in our share ownership, some of which are outside of our control, could result in an acquisition of control for the purposes of subsection 111(5) of the Canadian Tax Act. Furthermore, our ability to utilize non-capital losses (or U.S. equivalents) of companies that we may acquire in the future may be subject to limitations. As a result, even if we attain profitability, we may be unable to use a material portion of our non-capital losses and other tax attributes, which could negatively impact our future cash flows.

Our subsidiary's ability to use its U.S. net operating loss carryforwards and certain other tax attributes for U.S. income tax purposes may be limited.

As of December 31, 2023, we had U.S. federal net operating loss carryforwards, or NOLs, of \$54.0 million as a result of expenses incurred by Milestone Pharmaceuticals USA, Inc., our wholly owned subsidiary. Under current U.S. federal tax law, NOLs incurred in taxable years ending beginning after December 31, 2017 may be carried forward indefinitely. However, the deductibility of such NOLs is limited to 80% of taxable income. It is uncertain if and to what extent various states will conform to the federal law. In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50% change (by value) in its equity ownership over a three year period, the corporation's ability to use its pre change NOL carryforwards and other pre change tax attributes (such as research tax credits) to offset its post change income may be limited. It is possible that we have experienced one or more ownership changes in the past. In addition, we may also experience ownership changes in the future as a result of subsequent shifts in our share ownership some of which may be outside of our control. As a result, if we earn net taxable income, our ability to use our pre ownership change NOL carryforwards to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed.

Risks Related to the Development of Our Product Candidates

We have only one product candidate, etripamil, for which we are currently pursuing clinical development. Our future success is substantially dependent on the successful clinical development and regulatory approval of etripamil. If we are not able to obtain required regulatory approvals for etripamil or any future product candidates, we will not be able to commercialize etripamil or any future product candidates and our ability to generate revenue will be adversely affected.

Etripamil is currently our only product candidate. We have not obtained regulatory approval for etripamil or any product candidate, and it is possible that neither etripamil nor any product candidates we may seek to develop in the future will ever obtain regulatory approval. Neither we nor any future collaborator is permitted to market any drug product candidates in the United States or other countries until we receive regulatory approval from the FDA or applicable foreign regulatory agency. The time required to obtain approval or other marketing authorizations by the FDA and comparable foreign regulatory authorities is unpredictable but typically takes many years following the commencement of clinical trials and

depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions.

Prior to obtaining approval to commercialize etripamil and any other drug product candidate in the United States or elsewhere, we must demonstrate with substantial evidence from well controlled clinical trials, and to the satisfaction of the FDA or comparable foreign regulatory authorities, that such product candidates are safe and effective for their intended uses. Results from nonclinical studies and clinical trials can be interpreted in different ways. Even if we believe the nonclinical or clinical data for our product candidates are promising, such data may not be sufficient to support approval by the FDA and other regulatory authorities. The FDA may also require us to conduct additional nonclinical studies, including human factor studies, or clinical trials for our product candidates either prior to or post-approval, or it may object to elements of our clinical development program. For example, the FDA has requested additional nonclinical study data and reformatted and restructured clinical data in connection with our NDA for self-administered etripamil nasal spray for the treatment of PSVT and may request that we complete additional nonclinical studies, including human factor studies, or clinical trials upon review of our resubmitted NDA for self-administered etripamil nasal spray for the treatment of PSVT. In addition, the FDA typically refers applications for novel drugs, like etripamil and potentially any future product candidates, to an advisory committee composed of outside experts. The FDA is not bound by the recommendation of the advisory committee, but it considers such recommendation when making its decision.

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

We have invested a significant portion of our time and financial resources in the development of etripamil. Our business is dependent on our ability to successfully complete development of, obtain regulatory approval for, and, if approved, successfully commercialize etripamil and any future product candidates in a timely manner.

On October 23, 2023, we submitted an NDA to FDA for etripamil for the treatment of PSVT. On December 26, 2023, we announced that we received an RTF letter from the FDA. Upon preliminary review, the FDA determined that the NDA was not sufficiently complete to permit substantive review. The FDA requested clarification about the data recorded for the time of adverse events in Phase 3 clinical trials; FDA did not express concerns about the nature or severity of adverse events. Although we have held a Type A Meeting with the FDA to determine next steps for the filing for marketing approval and FDA indicated that the AE hourly timing data in question had minimal impact on the overall characterization of the etripamil safety profile, our revisions of the database to align with FDA requests may not be satisfactory and we cannot provide any assurance that our NDA resubmission will be accepted for filing or, even if filed, will be approved by the FDA.

Even if we eventually complete clinical testing and receive approval of an NDA, or foreign marketing application for etripamil and any future product candidates, the FDA or the comparable foreign regulatory authorities may grant approval or other marketing authorization contingent on the performance of costly additional clinical trials, including post-market clinical trials. The FDA or the comparable foreign regulatory authorities also may approve or authorize for marketing a product candidate for a more limited indication or patient population that we originally request, and the FDA or comparable foreign regulatory authorities may not approve or authorize the labeling that we believe is necessary or desirable for the successful commercialization of a product candidate. Any delay in obtaining, or inability to obtain, applicable regulatory approval or other marketing authorization would delay or prevent commercialization of that product candidate and would materially adversely impact our business and prospects.

In addition, the FDA and comparable foreign regulatory authorities may change their policies, adopt additional regulations or revise existing regulations or take other actions, which may prevent or delay approval of our future products under development on a timely basis. Such policy or regulatory changes could impose additional requirements upon us that could

delay our ability to obtain approvals, increase the costs of compliance or restrict our ability to maintain any marketing authorizations we may have obtained.

We may not be successful in our efforts to expand our pipeline of product candidates beyond etripamil for PSVT.

We intend to build a pipeline of product candidates beyond etripamil for PSVT and progress these product candidates through clinical development. For example, on November 11, 2023, we announced positive Phase 2 clinical trial data on etripamil for the treatment of AFib-RVR and we intend to conduct Phase 3 development for this indication. We may not be able to successfully expand the scope of cardiovascular indications for etripamil beyond PSVT, or leverage our expertise and experience with etripamil in PSVT to other product candidates. We may not be able to in-license, acquire or develop future product candidates that are safe and effective. Even if we are successful in continuing to expand etripamil to other indications and further build our pipeline, the potential product candidates that we identify may not be suitable for clinical development, including as a result of safety, tolerability, efficacy or other characteristics that indicate that they are unlikely to be drugs that will receive marketing approval, achieve market acceptance or obtain reimbursements from third-party payors. If we do not successfully execute on our strategy of expanding our product pipeline, it could significantly harm our financial position and adversely affect the trading price of our common shares.

The development of additional product candidates is risky and uncertain.

Efforts to identify, acquire or in-license, and then develop product candidates require substantial technical, financial and human resources, whether or not any product candidates are ultimately identified. Our efforts may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development, approved products or commercial revenues for many reasons, including the following:

- the methodology used may not be successful in identifying potential product candidates;
- competitors may develop alternatives that render any product candidates we develop obsolete;
- any product candidates we develop may nevertheless be covered by third parties' patents or other exclusive rights;
- a product candidate may be shown to have harmful side effects or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory criteria;
- a product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all; and
- a product candidate may not be accepted as safe and effective by physicians, patients, the medical community or third-party payors.

We have limited financial and management resources and, as a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater market potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial drugs or profitable market opportunities. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in circumstances under which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate. If we are unsuccessful in identifying and developing additional product candidates or are unable to do so, our business may be harmed.

Success in preclinical studies or earlier clinical trials may not be indicative of results in future clinical trials and we cannot assure you that any ongoing, planned or future clinical trials will lead to results sufficient for the necessary regulatory approvals.

Success in preclinical testing and earlier clinical trials does not ensure that later clinical trials will generate the same results or otherwise provide adequate data to demonstrate the efficacy and safety of a product candidate. Preclinical tests and Phase 1 and Phase 2 clinical trials are primarily designed to test safety, to study pharmacokinetics and pharmacodynamics and to understand the side effects of product candidates at various doses and schedules. Success in preclinical studies and earlier clinical trials does not ensure that later efficacy trials will be successful, nor does it predict final results. For example, our Phase 2 clinical trial of etripamil for PSVT was conducted in an electrophysiology lab, a controlled setting, in which episodes of supraventricular tachycardia, or SVT, were induced and etripamil was administered by healthcare providers. Our Phase 3 clinical trials were conducted in an at-home setting with patients self-administering etripamil and monitoring their cardiac activity as episodes of SVT occur. Additionally, in our Phase 2 clinical trial, four sprays of study drug were dispensed to patients using four separate FDA approved single spray devices. In our Phase 3 clinical trials, patients self-administered two to four sprays of study drug from an FDA approved device that is capable of delivering two separate sprays. While our RAPID Phase 3 trial did meet its primary endpoint, our NODE-301 clinical trial did not meet its primary endpoint. Etripamil and any future product candidates may fail to show the desired safety and efficacy in clinical development despite positive results in preclinical studies or having successfully advanced through earlier clinical trials.

In addition, the design of a clinical trial can determine whether its results will support approval of a product, and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. Clinical trial design flaws are more likely in therapy areas, such as PSVT, where there are limited previous trials from which to learn and model clinical trials. As an organization, we have limited experience designing clinical trials and may be unable to design and execute a clinical trial to support regulatory approval. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials even after achieving promising results in preclinical testing and earlier clinical trials. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, we may experience regulatory delays or rejections as a result of many factors, including changes in regulatory policy during the period of our product candidate development. Any such delays could negatively impact our business, financial condition, results of operations and prospects.

We may encounter substantial delays or difficulties in our clinical trials.

We may not commercialize, market, promote or sell any product candidate without obtaining marketing approval from the FDA or comparable foreign regulatory authorities, and we may never receive such approvals. It is impossible to predict when or if any of our product candidates will prove effective or safe in humans and will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must complete preclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. A failure of one or more clinical trials can occur at any stage of testing. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products.

We may experience numerous unforeseen events prior to, during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize etripamil and any future product candidates, including:

- delays in reaching a consensus with regulatory authorities on design or implementation of our clinical trials;
- regulators or institutional review boards, or IRBs, may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;

- delays in reaching agreement on acceptable terms with prospective clinical research organizations, or CROs, and clinical trial sites;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate, patients may drop out of these clinical trials at a higher rate than we anticipate or fail to return for post-treatment follow-up or we may fail to recruit suitable patients to participate in a trial;
- clinical trials of our product candidates may produce negative or inconclusive results;
- imposition of a clinical hold by regulatory authorities as a result of a serious adverse event, concerns with a class of product candidates or after an inspection of our clinical trial operations, trial sites or manufacturing facilities;
- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- interruptions resulting from public health emergencies, or other geopolitical tensions, such as Russia's incursion into Ukraine or the Israel-Hamas war; or
- we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenue from future drug sales or other sources. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional testing to bridge our modified product candidate to earlier versions. Clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates, if approved, or allow our competitors to bring competing drugs to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business, financial condition, results of operations and prospects.

Additionally, if the results of our clinical trials are inconclusive or if there are safety concerns or serious adverse events associated with our product candidates, we may:

- be delayed in obtaining marketing approval, if at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw, or suspend, their approval of the drug or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy, or REMS;
- be subject to the addition of labeling statements, such as warnings or contraindications;
- be sued; or

- experience damage to our reputation.

Our product development costs will also increase if we experience delays in testing or obtaining marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, need to be restructured or be completed on schedule, if at all.

Further, we, the FDA or an IRB may suspend our clinical trials at any time if it appears that we or our collaborators are failing to conduct a trial in accordance with regulatory requirements, including the FDA's current GCP regulations, that we are exposing participants to unacceptable health risks, or if the FDA finds deficiencies in our investigational new drug applications, or INDs, or the conduct of these trials. Therefore, we cannot predict with any certainty the schedule for commencement and completion of future clinical trials. If we experience delays in the commencement or completion of our clinical trials, or if we terminate a clinical trial prior to completion, the commercial prospects of our product candidates could be negatively impacted, and our ability to generate revenues from our product candidates may be delayed.

Clinical trials are very expensive, time consuming and difficult to design and implement.

Our product candidates will require clinical testing before we are prepared to submit an NDA, or comparable application to foreign regulatory authorities, for regulatory approval. We cannot predict with any certainty if or when we might submit an application for regulatory approval for any of our product candidates or whether any such application will be approved by the FDA or foreign regulatory authority. Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. For instance, the FDA or foreign regulatory authority may not agree with our proposed endpoints for any future clinical trial of our product candidates, which may delay the commencement of our clinical trials. In addition, we may not succeed in developing and validating disease relevant clinical endpoints based on insights regarding biological pathways for the diseases we are studying. The clinical trial process is also time consuming. We estimate that the successful completion of clinical trials for etripamil and any future product candidates will take several years to complete. Furthermore, failure can occur at any stage, and we could encounter problems that cause us to abandon or repeat clinical trials.

Enrollment and retention of patients in clinical trials is an expensive and time-consuming process and could be delayed, made more difficult or rendered impossible by multiple factors outside our control.

Identifying and qualifying patients to participate in our clinical trials is critical to our success. If the actual number of patients with PSVT, AFib-RVR or any other indications that we may pursue for etripamil or future product candidates, is smaller than we anticipate, we may encounter difficulties in enrolling patients in our clinical trials, thereby delaying or preventing development and approval of etripamil and any future product candidates. Even once enrolled we may be unable to retain a sufficient number of patients to complete any of our trials. Patient enrollment and retention in clinical trials depends on many factors, including the size of the patient population, the nature of the trial protocol, the existing body of safety and efficacy data, the number and nature of competing treatments and ongoing clinical trials of competing therapies for the same indication, the proximity of patients to clinical sites, the experience and capabilities of the clinical sites to recruit the correct patients, and the eligibility criteria for the trial. In our Phase 3 clinical trials, we are attempting to enroll elderly patients and patients taking concomitant medications that impact the heart, such as other calcium channel blockers and beta blockers. We are doing this in order to obtain efficacy and safety data on patients representing the subset of our intended population that is most vulnerable to safety concerns with the use of etripamil. Such patients may be difficult to enroll in this trial, and the lack of data on these patients may negatively impact the approvability or labeling of etripamil. Patient enrollment may also be affected by public health crises, such as patients experiencing difficulty accessing clinical trial sites and complying with clinical trial protocols.

In our Phase 2 clinical trial of etripamil for the treatment of PSVT, only 104 of 199 enrolled patients completed the trials, with 70 patients unable to induce or sustain episodes of SVT during the trial period. The first Phase 3 trial of PSVT for etripamil enrolled over 400 diagnosed patients with PSVT meeting inclusion and exclusion criteria in order to achieve the required treatment of 150 confirmed PSVT episodes. PSVT is episodic and unpredictable, and all of our Phase 3 trial designs depended on patients experiencing and recognizing an episode of SVT, self-administering etripamil and monitoring their cardiac activity using a monitoring device. We cannot control the timing of these episodes or guarantee

that patients will correctly recognize the episode, self-administer etripamil and use the cardiac monitor as directed. There is limited, if any, meaningful precedent from which to inform our trial design and make assumptions about patient enrollment and compliance. Accordingly, our Phase 3 trial design is subject to significantly more risks than if there were numerous studies upon which we could model our protocols.

Furthermore, our efforts to build relationships with patient communities may not succeed, which could result in delays in patient enrollment in our clinical trials. In addition, any negative results we may report in clinical trials of etripamil and any future product candidate may make it difficult or impossible to recruit and retain patients in other clinical trials of that same product candidate. For example, we reported a failed primary endpoint from our NODE-301 trial in March 2020. Delays or failures in planned patient enrollment or retention may result in increased costs, program delays or both, which could have a harmful effect on our ability to develop etripamil or any future product candidates or could render further development impossible. In addition, we expect to rely on CROs and clinical trial sites to ensure proper and timely conduct of our future clinical trials and, while we intend to enter into agreements governing their services, we will be limited in our ability to compel their actual performance. Similarly, our formulation of etripamil is designed to be self-administered as a nasal spray. While we expect enrolled patients to adhere to the protocol, our ability to ensure patient compliance is limited.

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

During the conduct of clinical trials, patients report changes in their health, including illnesses, injuries and discomforts, to their doctor. Often, it is not possible to determine whether or not the product candidate being studied caused these conditions. Regulatory authorities may draw different conclusions or require additional testing to confirm these determinations, if they occur. For example, in our Phase 2 clinical trial for PSVT, three serious adverse events, or SAEs, were considered possibly related to etripamil, including an episode of second-degree AV block that subsequently and spontaneously resolved. Calcium channel blockers have known side effects, such as slowing AV conduction, slowing the heart rate below normal levels and hypotension, or low blood pressure. While we designed etripamil to have a short pharmacodynamic effect to lower these risks, if etripamil is not quickly metabolized as designed, these known side effects may become more pronounced in patients who use etripamil.

In addition, it is possible that as we test etripamil or any future product candidates in larger, longer and more extensive clinical trials, or as use of etripamil or any future product candidates becomes more widespread if they receive regulatory approval, illnesses, injuries, discomforts and other adverse events that were observed in earlier trials, as well as conditions that did not occur or went undetected in previous trials, will be reported by subjects or patients. Many times, side effects are only detectable after investigational drugs are tested in large-scale pivotal trials or, in some cases, after they are made available to patients on a commercial scale after approval. If additional clinical experience indicates that etripamil or any future product candidates have side effects or causes serious or life-threatening side effects, the development of the product candidate may fail or be delayed, or, if the product candidate has received regulatory approval, such approval may be revoked, which would harm our business, prospects, operating results and financial condition.

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

From time to time, we may publish interim, “topline” or preliminary data from our clinical trials. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data becomes available. Preliminary or “topline” data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, interim and preliminary data should be viewed with caution until the final data are available. Differences between preliminary or interim data and final data could significantly harm our business prospects and may cause the trading price of our common shares to fluctuate significantly.

As an organization, we have completed pivotal clinical trials, but we have never successfully submitted an NDA. We may be unable to do so for any product candidates we may develop.

After completing pivotal clinical trials, we will need to obtain the approval of the FDA and other regulatory agencies to market etripamil or any of our other product candidates. Carrying out later-stage clinical trials and the submission of a successful NDA is a complicated process. As an organization, we have completed two Phase 3 clinical trials, we have other trials ongoing, and we have limited experience in preparing, submitting and prosecuting regulatory filings. Due to our limited experience with completing later stage trials, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to NDA submission and approval of etripamil for the treatment of PSVT. Our NDA for etripamil for PSVT received a refuse to file letter from FDA in December 2023 and despite guidance from FDA concerning requirements for resubmission, our resubmission of the NDA may similarly be subject to a refusal to file or even if accepted for filing by FDA, may result in a Complete Response Letter rather than approval. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials could prevent us from or delay us in commercializing etripamil for the treatment of PSVT or AFIB-RVR.

Even if we resubmit the NDA for etripamil for PSVT, the FDA may refuse to accept it for review or issue a complete response letter rather than approval for commercial marketing. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials could prevent us from or delay us in commercializing etripamil for the treatment of PSVT or AFIB-RVR.

We may explore additional strategic collaborations that may never materialize, or we may be required to relinquish important rights to and control over the development of our product candidates to any future collaborators.

We intend to continue to periodically explore a variety of possible strategic collaborations in an effort to gain access to additional product candidates or resources. We are likely to face significant competition in seeking appropriate strategic collaborators, and strategic collaborations can be complicated and time consuming to negotiate and document. We may not be able to negotiate strategic collaborations on acceptable terms, or at all. We are unable to predict when, if ever, we will enter into any strategic collaborations because of the numerous risks and uncertainties associated with establishing them.

Future collaborations could subject us to a number of risks, including:

- we may be required to undertake the expenditure of substantial operational, financial and management resources;
- we may be required to issue equity securities that would dilute our shareholders' percentage ownership of our Company;
- we may be required to assume substantial actual or contingent liabilities;
- we may not be able to control the amount and timing of resources that our strategic collaborators devote to the development or commercialization of our product candidates;
- strategic collaborators may select indications or design clinical trials in a way that may be less successful than if we were doing so;
- strategic collaborators may delay clinical trials, provide insufficient funding, terminate a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new version of a product candidate for clinical testing;

- strategic collaborators may not pursue further development of products resulting from the strategic collaboration arrangement or may elect to discontinue research and development programs;
- strategic collaborators may not commit adequate resources to the marketing and distribution of our product candidates, limiting our potential revenues from these products;
- disputes may arise between us and our strategic collaborators that result in the delay or termination of the research or development of our product candidates or that result in costly litigation or arbitration that diverts management's attention and consumes resources;
- strategic collaborators may experience financial difficulties;
- strategic collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in a manner that could jeopardize or invalidate our proprietary information or expose us to potential litigation;
- business combinations or significant changes in a strategic collaborator's business strategy may adversely affect a strategic collaborator's willingness or ability to complete its obligations under any arrangement;
- strategic collaborators could decide to move forward with a competing product candidate developed either independently or in collaboration with others, including our competitors; and
- strategic collaborators could terminate the arrangement or allow it to expire, which would delay the development and may increase the cost of developing our product candidates.

Risks Related to the Commercialization of Our Product Candidates

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

To successfully commercialize etripamil or any future product candidate that may result from our development programs, we will need to build out our sales and marketing capabilities, either on our own or with others. The establishment and development of our own commercial team or the establishment of a contract field force to market any product candidate we may develop will be expensive and time consuming and could delay any drug launch. Moreover, we cannot be certain that we will be able to successfully develop this capability. We may seek to enter into collaborations with other entities to use their established marketing and distribution capabilities, but we may be unable to enter into such agreements on favorable terms, if at all. If any current or future collaborators do not commit sufficient resources to commercialize our product candidates, or we are unable to develop the necessary capabilities on our own, we may be unable to generate sufficient revenue to sustain our business. We may compete with many companies that currently have extensive, experienced, and well-funded marketing and sales operations to recruit, hire, train and retain marketing and sales personnel. We will likely also face competition if we seek third parties to assist us with the sales and marketing efforts of etripamil and any future product candidates. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

Even if etripamil or any future product candidates receive marketing approval, they may fail to achieve market acceptance by physicians, patients, third-party payors or others in the medical community necessary for commercial success.

Even if etripamil or any future product candidates receive marketing approval, they may fail to gain market acceptance by physicians, patients, third-party payors and others in the medical community. If such product candidates do not achieve an adequate level of acceptance, we may not generate significant drug revenue and may not become profitable. The degree

of market acceptance of etripamil or any future product candidates, if approved for commercial sale, will depend on a number of factors, including but not limited to:

- the convenience and ease of administration compared to alternative treatments and therapies;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the efficacy and potential advantages compared to alternative treatments and therapies;
- the effectiveness of sales and marketing efforts;
- the prevalence and severity of any side effects;
- the strength of our relationships with patient communities;
- the cost of treatment in relation to alternative treatments and therapies, including any similar generic treatments;
- our ability to offer such drug for sale at competitive prices;
- the strength of marketing and distribution support;
- the availability of third-party coverage and adequate reimbursement; any restrictions on the use of the drug together with other medications; and the awareness and support from key opinion leaders in cardiology.

Our efforts to educate physicians, patients, third-party payors and others in the medical community on the benefits of etripamil or any future product candidates may require significant resources and may never be successful. Such efforts may require more resources than are typically required due to the potential of etripamil to shift the treatment paradigm away from acute-care settings to self-administration. Because we expect sales of etripamil or any future product candidates, if approved, to generate substantially all of our revenues for the foreseeable future, the failure of these product candidates to find market acceptance would harm our business.

Even if we successfully obtain approval for etripamil, its success will be dependent on its proper use.

While we have designed etripamil to be self-administered, we cannot control the successful use of the product. While we have conducted, and intend in the future to conduct, human factors studies to determine how to optimize the instructions for use, the results in our clinical trials may not be replicated by users in the future. If we are not successful in promoting the proper use of etripamil, if approved, we may not be able to achieve market acceptance or effectively commercialize the drug. In addition, even in the event of proper use of etripamil, individual devices may fail. Increasing the scale of production inherently creates increased risk of manufacturing errors, and we may not be able to adequately inspect every device that is produced, and it is possible that individual devices may fail to perform as designed. Manufacturing errors could negatively impact market acceptance of any of our product candidates that receive approval, result in negative press coverage, or increase our liability.

If the market opportunities for etripamil and any future product candidates are smaller than we estimate, our business may suffer.

Our eligible patient population may differ significantly from the actual market addressable by our product candidates. Our projections of both the number of people who have these conditions, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including the scientific literature, insurance claims databases or market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of

these diseases. The number of patients may turn out to be lower than expected. Likewise, the potentially addressable patient population for each of our product candidates may be limited or may not be amenable to treatment with our product candidates, and new patients may become increasingly difficult to identify or access. If the market opportunities for our product candidates are smaller than we estimate, our business and results of operations could be adversely affected.

We may face substantial competition, which may result in others developing or commercializing drugs before or more successfully than us.

The development and commercialization of new drugs is highly competitive. We may face competition from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

More established companies may have a competitive advantage over us due to their greater size, resources and institutional experience. In particular, these companies have greater experience and expertise in securing reimbursement, government contracts and relationships with key opinion leaders, conducting testing and clinical trials, obtaining and maintaining regulatory approvals and distribution relationships to market products and marketing approved drugs. These companies also have significantly greater research and marketing capabilities than we do. If we are not able to compete effectively against existing and potential competitors, our business and financial condition may be harmed.

As a result of these factors, our competitors may obtain regulatory approval of their drugs before we are able to, which may limit our ability to develop or commercialize etripamil and any future product candidates. Our competitors may also develop therapies that are safer, more effective, more widely accepted or less expensive than ours, and may also be more successful than we in manufacturing and marketing their drugs. These advantages could render our product candidates obsolete or non-competitive before we can recover the costs of such product candidates' development and commercialization.

Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific, management and commercial personnel, establishing clinical trial sites and subject registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

If we commercialize etripamil or any future product candidates outside of the United States, a variety of risks associated with international operations could harm our business.

We intend to seek approval to market etripamil outside of the United States and may do so for future product candidates. If we market approved products outside of the United States, we expect that we will be subject to additional risks in commercialization including:

- different regulatory requirements for approval of therapies in foreign countries;
- reduced protection for intellectual property rights;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;

- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- foreign reimbursement, pricing and insurance regimes;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from pandemics and public health crisis (such as the COVID-19 pandemic), geopolitical actions, including war (such as the Russia-Ukraine and Israel-Hamas wars) and terrorism or natural disasters including earthquakes, typhoons, floods and fires.

We have no prior experience in these areas. In addition, there are complex regulatory, tax, labor and other legal requirements imposed by many of the individual countries in and outside of Europe with which we will need to comply. Many biopharmaceutical companies have found the process of marketing their own products in foreign countries to be very challenging.

The pharmaceutical industry in China is highly regulated, and such regulations are subject to change, which may negatively affect the commercialization of the Company's medicines and drug candidates in that country.

On May 15, 2021, the Company entered into a license and collaboration agreement, or the License Agreement, with Ji Xing, which is an entity affiliated with RTW Investments, LP (RTW), an existing shareholder. Under the License Agreement, the Company granted Ji Xing exclusive development and commercialization rights to any pharmaceutical product that uses a device to deliver the Company's proprietary calcium channel blocker known as etripamil by nasal spray for all prophylactic and therapeutic uses in humans in the following territories: People's Republic of China, including mainland China, Hong Kong Special Administrative Region, Macau Special Administrative Region, and Taiwan (the Territory). The pharmaceutical industry in China is subject to comprehensive government regulation and supervision, encompassing the approval, registration, manufacturing, packaging, licensing and marketing of new medicines. In recent years, the regulatory framework in China for pharmaceutical companies has undergone significant changes, which the Company expects will continue. Any such change may cause delays in or prevent the successful research, development, manufacturing or commercialization of etripamil in the greater China region and may reduce the current benefits the Company believes are available to it from licensing such products to be developed, manufactured and sold in the greater China region. In addition, any failure by the Company or its partners to maintain compliance with applicable laws and regulations or obtain and maintain required licenses and permits may result in the suspension or termination of its business activities in China or create other legal risks.

Coverage and adequate reimbursement may not be available for etripamil or any future product candidates, which could make it difficult for us to gain market acceptance.

Market acceptance and sales of any product candidates that we commercialize, if approved, will depend in part on the extent to which reimbursement for these drugs and related treatments will be available from third-party payors, including government health administration authorities, managed care organizations and other private health insurers. Third-party payors decide for which therapies and establish reimbursement levels. While no uniform policy for coverage and reimbursement exists in the United States, third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies. However, decisions regarding the extent of coverage and amount of reimbursement to be provided for any product candidates that we develop will be made on a payor-by-payor basis. Therefore, one payor's determination to provide coverage for a drug does not assure that other payors will also provide coverage, and adequate reimbursement, for the drug. Additionally, a third-party payor's decision to provide coverage for a therapy does not imply that an adequate reimbursement rate will be approved. Each payor determines whether or not it will provide coverage for a therapy, what amount it will pay the manufacturer for the therapy, and on what tier of its formulary it will be placed. The position on a payor's list of covered drugs, or formulary, generally

determines the co-payment that a patient will need to make to obtain the therapy and can strongly influence the adoption of such therapy by patients and physicians. Patients who are prescribed treatments for their conditions and providers prescribing such services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products.

Third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. We cannot be sure that coverage and reimbursement will be available for any drug that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Inadequate coverage and reimbursement may impact the demand for, or the price of, any drug for which we obtain marketing approval. If coverage and adequate reimbursement are not available, or are available only to limited levels, we may not be able to successfully commercialize etripamil or any future product candidates that we develop.

In addition, we expect that the increased emphasis on managed care and cost containment measures in the United States by third-party payors and government authorities will continue and will place pressure on pharmaceutical pricing and coverage. Coverage policies and third-party reimbursement rates may change at any time. Therefore, even if favorable coverage and reimbursement status is attained for one or more drug products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future. If we are unable to obtain and maintain sufficient third-party coverage and adequate reimbursement for our drug products, the commercial success of our drug products may be greatly hindered and our financial condition and results of operations may be materially and adversely affected.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any product candidates that we may develop.

We face an inherent risk of product liability exposure related to the testing of etripamil or any future product candidates in clinical trials and may face an even greater risk if we commercialize any product candidate that we may develop. If we cannot successfully defend ourselves against claims that any such product candidates caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidate that we may develop;
- loss of revenue;
- substantial monetary awards to trial participants or patients;
- significant time and costs to defend the related litigation;
- withdrawal of clinical trial participants;
- increased insurance costs;
- the inability to commercialize any product candidate that we may develop; and injury to our reputation and significant negative media attention.

Although we maintain clinical trial liability insurance coverage with maximum coverage of \$10 million per incident and an aggregate loss limit of \$10 million such insurance may not be adequate to cover all liabilities that we may incur with a medical product during the clinical trials. We anticipate that we will need to increase our insurance coverage each time we commence a clinical trial and maintain a product liability insurance if we successfully commercialize any product candidate. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Risks Related to Regulatory Compliance

Even if we obtain and maintain approval for etripamil or any future product candidates from the FDA, we may never obtain approval of etripamil or any future product candidates outside of the United States, which would limit our market opportunities and could harm our business.

Approval of a product candidate in the United States by the FDA does not ensure approval of such product candidate by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA. Sales of etripamil or any future product candidates outside of the United States will be subject to foreign regulatory requirements governing clinical trials and marketing approval. Even if the FDA grants marketing approval for a product candidate, comparable foreign regulatory authorities also must approve the manufacturing and marketing of the product candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and more onerous than, those in the United States, including additional preclinical studies or clinical trials. In many countries outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that country. In some cases, the price that we intend to charge for any product candidates, if approved, is also subject to approval. Obtaining approval for etripamil or any future product candidates in the European Union from the European Commission following the opinion of the European Medicines Agency, if we choose to submit a marketing authorization application there, would be a lengthy and expensive process. Even if a product candidate is approved, the FDA or the European Commission, as the case may be, may limit the indications for which the drug may be marketed, require extensive warnings on the drug labeling or require expensive and time-consuming additional clinical trials or reporting as conditions of approval. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of etripamil or any future product candidates in certain countries.

Further, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries. Also, regulatory approval for our product candidates may be withdrawn. If we fail to comply with the regulatory requirements, our target market will be reduced and our ability to realize the full market potential of etripamil or any future product candidates will be harmed and our business, financial condition, results of operations and prospects could be harmed.

Even if we obtain regulatory approval for etripamil or any future product candidates, they will remain subject to ongoing regulatory oversight.

Even if we obtain regulatory approvals for etripamil or any future product candidates, such approvals will be subject to ongoing regulatory requirements for manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping and submission of safety and other post-market information. Any regulatory approvals that we receive for etripamil or any future product candidates may also be subject to a REMS, limitations on the approved indicated uses for which the drug may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 trials, and surveillance to monitor the quality, safety and efficacy of the drug. Such regulatory requirements may differ from country to country depending on where we have received regulatory approval.

In addition, drug manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP requirements and adherence to commitments made in the NDA or foreign marketing application. If we, or a regulatory authority, discover previously unknown problems with a drug, such as adverse events of unanticipated severity or frequency, or problems with the facility where the drug is manufactured or if a regulatory authority disagrees with the promotion, marketing or labeling of that drug, a regulatory authority may impose restrictions relative to that drug, the manufacturing facility or us, including requesting a recall or requiring withdrawal of the drug from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following approval of etripamil or any future product candidates, a regulatory authority may:

- issue an untitled letter or warning letter asserting that we are in violation of the law;
- seek an injunction or impose administrative, civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve a pending NDA or comparable foreign marketing application or any supplements thereto submitted by us or our partners;
- restrict the marketing or manufacturing of the drug;
- seize or detain the drug or otherwise require the withdrawal of the drug from the market;
- refuse to permit the import or export of product candidates; or
- refuse to allow us to enter into supply contracts, including government contracts.

Moreover, the FDA strictly regulates the promotional claims that may be made about drug products. In particular, a product may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. Physicians, on the other hand, may prescribe products for off-label uses. Although the FDA and other regulatory agencies do not regulate a physician's choice of drug treatment made in the physician's independent medical judgment, they do restrict promotional communications from companies or their sales force with respect to off-label uses of products for which marketing clearance has not been issued. However, biopharmaceutical companies may share truthful and not misleading information that is otherwise consistent with the labeling. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant civil, criminal and administrative penalties.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize etripamil or any future product candidates and harm our business, financial condition, results of operations and prospects.

The FDA's and other regulatory authorities' policies may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations.

In addition, we cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad.

Our relationships with customers, physicians, and third-party payors are subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, health information privacy and security laws, and other healthcare laws and regulations. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

Healthcare providers, including 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

current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third-party payors subject us to various federal and state fraud and abuse laws, data privacy and security laws, transparency laws and other healthcare laws that may constrain the business or financial arrangements and relationships through which we research, sell, market, and distribute our products, if we obtain marketing approval.

The federal Anti-Kickback Statute prohibits the offer, receipt, or payment of remuneration in exchange for or to induce the referral of patients or the use of products or services that would be paid for in whole or part by Medicare, Medicaid or other federal healthcare programs. Remuneration has been broadly defined to include anything of value, including cash, improper discounts, and free or reduced price items and services. Additionally, the intent standard under the federal Anti-Kickback Statute was amended by the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, PPACA, to a stricter standard such that a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Further, PPACA codified case law 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 False Claims Act.

The federal false claims, including the False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, false or fraudulent claims for payment of federal funds, and knowingly making, or causing to be made, a false record or statement material to a false or fraudulent claim to avoid, decrease or conceal an obligation to pay money to the federal government.

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

HIPAA, as amended by HITECH, also imposes among other things, certain standards and obligations on covered entities including certain healthcare providers, health plans and healthcare clearinghouses, and their respective business associates that create, receive, maintain, or transmit individually identifiable health information for or on behalf of a covered entity as well as their covered subcontractors relating to the privacy, security, transmission and breach reporting of individually identifiable health information.

The federal Physician Payments Sunshine Act, and its implementing regulations, require certain manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to Centers for Medicare & Medicaid Services information related to certain payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other healthcare professionals (such as physician assistants and nurse practitioners), and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members.

We will also be subject to healthcare regulation and enforcement by the U.S. federal government and the states and any other countries in which we conduct our business, including our research, and the sales, marketing and distribution of our product candidates and products once they have obtained marketing authorization.

Analogous state and foreign anti-kickback and false claims laws that may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third party payors, including private insurers, or that apply regardless of payor; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; state and local 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; state laws that require the reporting of information related to drug pricing; state and local laws requiring the registration of pharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information in some circumstances,

many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Ensuring that our business arrangements with third parties comply with applicable healthcare laws and regulations will likely be costly. 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, damages, fines, disgorgement, imprisonment, exclusion from participating in government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm and the curtailment or restructuring of our operations.

If the physicians or other providers or entities with whom we expect to do business are found not to be in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs. Even if resolved in our favor, litigation or other legal proceedings relating to healthcare laws and regulations may cause us to incur significant expenses and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common shares. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development, manufacturing, sales, marketing or distribution activities. Uncertainties resulting from the initiation and continuation of litigation or other proceedings relating to applicable healthcare laws and regulations could have a material adverse effect on our ability to compete in the marketplace.

Healthcare legislative reform measures may have a negative impact on our business and results of operations.

In the United States and some foreign jurisdictions, there have been, and continue to be, several legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post approval activities, and affect our ability to profitably sell any product candidates for which we obtain marketing approval. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. For example, in March 2010 the PPACA, was passed, which substantially changed the way healthcare is financed by both governmental and private payors in the United States. There have been executive, judicial and Congressional challenges to certain aspects of the PPACA. For example, the Tax Cuts and Jobs Act of 2017, or the Tax Act, was enacted, which included a provision that repealed, effective January 1, 2019, the tax based shared responsibility payment imposed by the PPACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the “individual mandate.” In addition, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the PPACA mandated “Cadillac” tax on high cost employer sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminated the health insurer tax. On June 17, 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the PPACA is unconstitutional in its entirety because the “individual mandate” was repealed by Congress. Moreover, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the PPACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the PPACA. Further, on August 16, 2022, President Biden signed the Inflation Reduction Act of 2022, or IRA, into law, which among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in PPACA marketplaces through plan year 2025. The IRA also eliminates the “donut hole” under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and through a newly established manufacturer discount program. It is possible that the PPACA will be subject to judicial or Congressional challenges in the future. It is unclear how any additional healthcare reform measures of the Biden administration will impact the PPACA and our business.

Further, in the United States there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under government payor programs, and review the relationship between pricing and manufacturer patient programs. At the federal level, in July 2021, the Biden administration released an executive order, “Promoting Competition in the American Economy,” with multiple provisions aimed at prescription drugs. In response to Biden’s executive order, on September 9, 2021, the U.S. Department of Health and Human Services, or HHS, released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue as well as potential administrative actions HHS can take to advance these principles. Further, the IRA, among other things (i) directs HHS to negotiate the price of certain high-expenditure, single-source drugs and biologics covered under Medicare and (ii) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions take effect progressively starting in fiscal year 2023. On August 29, 2023, HHS announced the list of the first ten drugs that will be subject to price negotiations, although they may be the Medicare drug price negotiation program is currently subject to legal challenges. It is unclear how the IRA will be implemented but is likely to have a significant impact on the pharmaceutical industry. In response to the Biden administration’s October 2022 executive order, on February 14, 2023, HHS released a report outlining three new models for testing by the Centers for Medicare & Medicaid Services, or CMS, Innovation Center which will be evaluated on their ability to lower the cost of drugs, promote accessibility, and improve quality of care. It is unclear whether the models will be utilized in any health reform measures in the future. Further, on December 7, 2023, the Biden administration announced an initiative to control the price of prescription drugs through the use of march-in rights under the Bayh-Dole Act. On December 8, 2023, the National Institute of Standards and Technology published for comment a Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights which for the first time includes the price of a product as one factor an agency can use when deciding to exercise march-in rights. While march-in rights have not previously been exercised, it is uncertain if that will continue under the new framework. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. For example, on January 5, 2024, the FDA approved Florida’s Section 804 Importation Program, or SIP, proposal to import certain drugs from Canada for specific state healthcare programs. It is unclear how this program will be implemented, including which drugs will be chosen, and whether it will be subject to legal challenges in the United States or Canada. Other states have also submitted SIP proposals that are pending review by the FDA. Any such approved importation plans, when implemented, may result in lower drug prices for products covered by those programs. We expect that additional U.S. healthcare reform measures will be adopted in the future, any of which could limit the amounts that the U.S. federal government will pay for healthcare products and services, which could result in reduced demand for etripamil or any future product candidates or additional pricing pressures.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which includes reductions to Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect until 2032 unless additional Congressional action is taken. Additionally, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug’s average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

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

Our business involves the use of hazardous materials and we and our third-party manufacturers and suppliers must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our research and development activities and our third-party manufacturers' and suppliers' activities involve the controlled storage, use and disposal of hazardous materials owned by us, including the components of etripamil and any future product candidates and other hazardous compounds. We and our manufacturers and suppliers are subject to laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. In some cases, these hazardous materials and various wastes resulting from their use are stored at our and our manufacturers' facilities pending their use and disposal. We cannot eliminate the risk of contamination, which could cause an interruption of our commercialization efforts, research and development efforts and business operations, environmental damage resulting in costly clean-up and liabilities under applicable laws and regulations governing the use, storage, handling and disposal of these materials and specified waste products. Although we believe that the safety procedures utilized by our third-party manufacturers for handling and disposing of these materials generally comply with the standards prescribed by these laws and regulations, we cannot guarantee that this is the case or eliminate the risk of accidental contamination or injury from these materials. In such an event, we may be held liable for any resulting damages and such liability could exceed our resources and state or federal or other applicable authorities may curtail our use of certain materials and/or interrupt our business operations. Furthermore, environmental laws and regulations are complex, change frequently and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance. We do not currently carry hazardous waste insurance coverage.

Risks Related to Our Dependence on Third Parties

We will rely on third parties to produce clinical and commercial supplies of etripamil and any future product candidates.

We do not own or operate facilities for drug manufacturing, storage and distribution, or testing. We are dependent on third parties to manufacture the clinical supplies of etripamil and any future product candidates. The facilities used by our contract manufacturers to manufacture etripamil and any future product candidates must be approved by the FDA pursuant to inspections that will be conducted after we resubmit our NDA to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the regulatory requirements, known as cGMPs for manufacture of active drug substances, nasal spray device, and finished product candidates. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, we will not be able to secure and/or maintain regulatory approval for our product candidates. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. We intend to use multiple contract manufacturers for clinical and commercial supply of our drug product and drug substance. As such, we will need to demonstrate to the FDA that the drug product and drug substance from these contract manufacturers are comparable, which may include conducting additional equivalence studies. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. Any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing clinical trial due to the need to replace a third-party manufacturer could considerably delay completion of our clinical trials, product testing and potential regulatory approval of our product candidates.

Further, we also will rely on third-party manufacturers to supply us with sufficient quantities of etripamil and any future product candidates, if approved, for commercialization. We do not yet have a commercial supply agreement for commercial quantities of drug substance, drug product or nasal spray device. If we are not able to meet market demand for any approved product, it would negatively affect our ability to generate revenue, harm our reputation, and could have a material and adverse effect on our business and financial condition. Increasing the scale of production inherently creates increased risk of manufacturing errors, and we may not be able to adequately inspect every device that is produced, and it is possible that individual devices may fail to perform as designed. Manufacturing errors could negatively impact market acceptance of any of our product candidates that receive approval, result in negative press coverage, or increase our liability.

Further, our reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured product candidates ourselves, including:

- inability to meet our product specifications and quality requirements consistently;
- delay or inability to procure or expand sufficient manufacturing capacity;
- issues related to scale-up of manufacturing;
- costs and validation of new equipment and facilities required for scale-up;
- our third-party manufacturers may not be able to execute our manufacturing procedures and other logistical support requirements appropriately;
- our third-party manufacturers may fail to comply with cGMP-compliance and other inspections by the FDA or other comparable regulatory authorities;
- our inability to negotiate manufacturing agreements with third parties under commercially reasonable terms, if at all;
- breach, termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us;
- reliance on a single source for the nasal spray device;
- our third-party manufacturers may not devote sufficient resources to our product candidates;
- we may not own, or may have to share, the intellectual property rights to any improvements made by our third-party manufacturers in the manufacturing process for our product candidates;
- operations of our third party manufacturers or suppliers could be disrupted by conditions unrelated to our business or operations, including public health emergencies, natural disasters, such as earthquakes, fires or floods, the bankruptcy of the manufacturer or supplier, carrier disruptions or increased costs that are beyond our control, and global macro uncertainty related to Russia's incursion into Ukraine or Israel-Hamas war.

In addition, if we enter into a strategic collaboration with a third party for the commercialization of etripamil or any future product candidate, we will not be able to control the amount of time or resources that they devote to such efforts. If any strategic collaborator does not commit adequate resources to the marketing and distribution of etripamil or any future product candidate, it could limit our potential revenues.

Any of these events could lead to clinical trial delays, failure to obtain regulatory approval or affect our ability to successfully commercialize etripamil or any future product candidates once approved. Some of these events could be the basis for FDA action, including injunction, request for recall, seizure, or total or partial suspension of production.

We rely on third parties to conduct, supervise and monitor our preclinical studies and clinical trials, and if those third parties perform in an unsatisfactory manner, it may harm our business.

We have engaged CROs to conduct our Phase 3 clinical trials of etripamil for the treatment of PSVT, and our Phase 2 clinical trial of etripamil for the treatment of AFib-RVR, and we expect to engage a CRO for future clinical trials of etripamil and any future product candidates. We do not currently have the ability to independently conduct any clinical trials. We rely on CROs and clinical trial sites to ensure the proper and timely conduct of our preclinical studies and clinical trials, and we expect to have limited influence over their actual performance. We rely upon CROs to monitor and manage data for our clinical programs, as well as the execution of future nonclinical studies. We expect to control only certain

aspects of our CROs' activities. Nevertheless, we will be responsible for ensuring that each of our preclinical studies and clinical trials is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on the CROs does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with the good laboratory practices, or GLPs, and GCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities in the form of International Conference on Harmonization guidelines for any of our product candidates that are in preclinical and clinical development. The regulatory authorities enforce GCPs through periodic inspections of trial sponsors, principal investigators and clinical trial sites. Although we rely on CROs to conduct GCP-compliant clinical trials, we remain responsible for ensuring that each of our GLP preclinical studies and clinical trials is conducted in accordance with its investigational plan and protocol and applicable laws and regulations, and our reliance on the CROs does not relieve us of our regulatory responsibilities. If we or our CROs fail to comply with GCPs, the clinical data generated in our clinical trials may be deemed unreliable, and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. Accordingly, if our CROs fail to comply with these regulations or fail to recruit a sufficient number of subjects, we may be required to repeat clinical trials, which would delay the regulatory approval process.

Our reliance on third parties to conduct clinical trials will result in less direct control over the management of data developed through clinical trials than would be the case if we were relying entirely upon our own staff. Any failure by third parties to prevent unauthorized access, use or disclosure of data, including personal data regarding our patients or employees, could harm our reputation, cause us not to comply with federal and/or state breach notification laws and foreign law equivalents and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal data.

Communicating with CROs and other third parties can be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Such parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- experience regulatory compliance issues;
- experience business disruptions from public health emergencies; or
- undergo changes in priorities or become financially distressed.

These factors may materially adversely affect the willingness or ability of third parties to conduct our clinical trials and may subject us to unexpected cost increases that are beyond our control. If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, fail to comply with regulatory requirements, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for any other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize, any product candidate that we develop. As a result, our financial results and the commercial prospects for any product candidate that we develop would be harmed, our costs could increase, and our ability to generate revenue could be delayed. While we will have agreements governing their activities, our CROs will not be our employees, and we will not control whether or not they devote sufficient time and resources to our future clinical and nonclinical programs. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials, or other drug development activities that could harm our business. We face the risk of potential unauthorized disclosure or misappropriation of our intellectual property by CROs, which may reduce our trade secret protection and allow our potential competitors to access and exploit our proprietary technology.

If our relationship with any of these CROs terminates, we may not be able to enter into arrangements with alternative CROs or do so on commercially reasonable terms. Switching or adding additional CROs involves substantial cost and

requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can negatively affect our ability to meet our desired clinical development timelines. Though we intend to manage carefully our relationships with our CROs, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a negative impact on our business, financial condition and prospects.

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

Etripamil is intended to be used with a nasal-spray device, which may result in additional regulatory and supply risks.

Etripamil is administered through a nasal-spray device that we obtain from a single source supplier, and that supplier is relying on multiple component suppliers, some of whom are single source suppliers. There are a limited number of device suppliers that address our particular design requirements. While we intend to explore alternative nasal spray devices for the delivery of etripamil that are produced by other suppliers to have backup sources for future commercial needs, we may not identify other nasal device suppliers that meet our requirements, and such alternative devices may not be as effective at the delivery of etripamil as our current supplier's device. We do not currently have a formal supply agreement with our current sole nasal spray device supplier, and obtain such devices as needed. Even if we reach an agreement for commercial supply, if we do not have additional nasal spray device suppliers, our sole supplier may be unable to meet our demands. Unpredictability of supply could have a material adverse effect on our commercialization plans for etripamil, if approved, and could have a material adverse effect on our business and financial condition.

Our finished drug product in the intra-nasal delivery system will be regulated as a drug/device combination product. We may experience delays in obtaining regulatory approval of etripamil given the increased complexity of the review process when approval of the product and a delivery device is sought under a single marketing application. In the United States, each component of a combination product is subject to the requirements established by the FDA for that type of component, whether a drug, biologic, or device. The delivery system device would be subject to FDA device requirements regarding design, performance and validation as well as human factors testing, among other things.

Delays in or failure of the studies conducted by us, or failure of our Company, our collaborators, if any, or the third-party providers or suppliers to obtain or maintain regulatory approval could result in increased development costs, delays in or failure to obtain regulatory approval, and associated delays in etripamil reaching the market. Further, failure to successfully develop or supply the device, or to gain or maintain its approval, could adversely affect sales of etripamil.

Risks Related to Our Intellectual Property

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

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to etripamil and any future product candidates. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our product candidates. The patent application and prosecution process is expensive and time-consuming. We may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. We may also fail to identify patentable aspects of our research and development before it is too late to obtain patent protection. Therefore, these and any of our patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. It is possible that defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future,

such as with respect to proper priority claims, inventorship, claim scope or patent term adjustments. If any future licensors or licensees are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised and we might not be able to prevent third parties from making, using and selling competing products. If there are material defects in the form or preparation of our patents or patent applications, such patents or applications may be invalid and unenforceable. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how. Any of these outcomes could impair our ability to prevent competition from third parties.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain. 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. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. No consistent policy regarding the breadth of claims allowed in biotechnology and pharmaceutical patents has emerged to date in the United States or in many foreign jurisdictions. In addition, the determination of patent rights with respect to pharmaceutical compounds and technologies commonly involves complex legal and factual questions, which has in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Furthermore, recent changes in patent laws in the United States, including the America Invents Act of 2011, may affect the scope, strength and enforceability of our patent rights or the nature of proceedings that may be brought by us related to our patent rights.

We may not be aware of all third-party intellectual property rights potentially relating to etripamil or any future product candidates. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. For example, U.S. applications filed before November 28, 2000 and certain U.S. applications filed after that date that will not be filed outside the United States remain confidential until a patent issues. Therefore, we cannot be certain that we were the first to make the inventions claimed in our patents or pending patent applications, or that we were the first to file for patent protection of such inventions. Similarly, should we own any patents or patent applications in the future, we may not be certain that we were the first to file for patent protection for the inventions claimed in such patents or patent applications. As a result, the issuance, scope, validity and commercial value of our patent rights cannot be predicted with any certainty. Moreover, we may be subject to a third-party pre-issuance submission of prior art to the U.S. Patent and Trademark Office, or USPTO, or become involved in opposition, derivation, reexamination, inter parties review, post grant review, or interference proceedings, in the United States or elsewhere, challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or product candidates 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.

Our pending and future patent applications may not result in patents being issued that protect our technology or product candidates, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. Even if our patent applications are issued as patents, they may not be issued in a form that will provide us with any meaningful protection against competing products or processes sufficient to achieve our business objectives, 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. Our competitors may seek to market generic versions of any approved products by submitting abbreviated new drug applications to the FDA in which they claim that patents owned or licensed by us are invalid, unenforceable and/or not infringed. Alternatively, our competitors may seek approval to market their own products similar to or otherwise competitive with our products. In these circumstances, we may need to defend and/or assert our patents, including by filing lawsuits alleging patent infringement. In any of these types of proceedings, a court or other agency with jurisdiction may find our patents invalid and/or unenforceable.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and 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. In addition, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized.

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

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In addition, periodic maintenance fees, renewal fees, annuity fees and various other government fees on patents and/or applications will have to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our owned patents and/or applications and any patent rights we may own or license in the future. We rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The USPTO and various non-U.S. government patent agencies require compliance with several procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply.

Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to maintain the patents and patent applications covering our products or technologies, we may not be able to stop a competitor from marketing products that are the same as or similar to etripamil or any future product candidates, which would have a material adverse effect on our business. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, potential competitors might be able to enter the market and this circumstance could harm our business.

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

Given the amount of time required for the development, testing and regulatory review of new product candidates, such as etripamil, patents protecting such candidates might expire before or shortly after such candidates are commercialized. We expect to seek extensions of patent terms in the United States and, if available, in other countries where we are prosecuting patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). However, the applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their drug earlier than might otherwise be the case.

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

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business. The following examples are illustrative:

- others may be able to make compounds or formulations that are similar to etripamil or formulations of etripamil or our future product candidates but that are not covered by the claims of any patents, should they issue, that we own or control;
- we or any strategic partners might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own or control;

- we might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own or control may not provide us with any competitive advantages, or may be held invalid or unenforceable as a result of legal challenges;
- our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights and then use the information learned from such activities to develop competitive drugs for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable; and the patents of others may have an adverse effect on our business.

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

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

Competitors may infringe our issued patents, future trademarks, copyrights 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 and divert the time and attention of our management and scientific personnel. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents, trademarks, copyrights or other intellectual property. In addition, in a patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patents do not cover the invention. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

In any infringement litigation, any award of monetary damages we receive may not be commercially valuable. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common shares. Moreover, there can be no assurance that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing, misappropriating or successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a negative impact on our ability to compete in the marketplace.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a negative impact on the success of our business.

Our commercial success depends, in part, upon our ability and the ability of future collaborators, if any, to develop, manufacture, market and sell etripamil and any future product candidates and use our proprietary technologies without infringing the proprietary rights and intellectual property of third parties. The biotechnology and pharmaceutical industries are characterized by extensive and complex litigation regarding patents and other intellectual property rights. We may in the future become party to, or be threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to etripamil and any future product candidates and technology, including interference proceedings, post grant review and inter parties review before the USPTO. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit. There is a risk that third parties may choose to engage in litigation with us to enforce or to otherwise assert their patent rights against us. Even if we believe such claims are without merit, a court of competent jurisdiction could hold that these third-party patents are valid, enforceable and infringed, which could have a negative impact on our ability to commercialize our current and any future product candidates. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. If we are found to infringe a third party's valid and enforceable intellectual property rights, we could be required to obtain a license from such third party to continue developing, manufacturing and marketing our product candidate(s) and technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. We could be forced, including by court order, to cease developing, manufacturing and commercializing the infringing technology or product candidate. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent or other intellectual property right. A finding of infringement could prevent us from manufacturing and commercializing etripamil or any future product candidates or force us to cease some or all of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business, financial condition, results of operations and prospects. See the section herein titled "Legal Proceedings" for additional information.

We may need to license 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 rights, including patent rights, that are important or necessary to the development of etripamil or any future product candidates. It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our product candidates, in which case we would be required to obtain a license from these third parties. Such a license may not be available on commercially reasonable terms, or at all, and we could be forced to accept unfavorable contractual terms. If we are unable to obtain such licenses on commercially reasonable terms, our business could be harmed.

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

Many of our employees, consultants and advisors are currently, or were previously, employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and advisors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that these individuals or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

In addition, we may in the future be subject to claims by our former employees or consultants asserting an ownership right in our patents or patent applications, as a result of the work they performed on our behalf. Although it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own, and we cannot be certain that our agreements with such parties will be upheld in the face of a potential challenge or that they will not be breached, for which we may not have an adequate remedy. The assignment of intellectual property rights may not be self-executing or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property.

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

The United States has recently enacted and implemented wide ranging patent reform legislation. The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce patents that we have licensed or that we might obtain in the future. Similarly, changes in patent law and regulations in other countries or jurisdictions, changes in the governmental bodies that enforce them or changes in how the relevant governmental authority enforces patent laws or regulations may weaken our ability to obtain new patents or to enforce patents that we have licensed or that we may obtain in the future. For example, the complexity and uncertainty of European patent laws have also increased in recent years. In Europe, a new unitary patent system is scheduled to be introduced by June 1, 2023, which would significantly impact European patents, including those granted before the introduction of such a system. Under the unitary patent system, European applications will soon have the option, upon grant of a patent, of becoming a Unitary Patent which will be subject to the jurisdiction of the Unitary Patent Court (UPC). As the UPC is a new court system, there is no precedent for the court, increasing the uncertainty of any litigation. Patents granted before the implementation of the UPC will have the option of opting out of the jurisdiction of the UPC and remaining as national patents in the UPC countries. Patents that remain under the jurisdiction of the UPC will be potentially vulnerable to a single UPC-based revocation challenge that, if successful, could invalidate the patent in all countries who are signatories to the UPC. We cannot predict with certainty the long-term effects of any potential changes.

We may not be able to protect our intellectual property rights throughout the world, which could negatively impact our business.

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States could be less extensive than those in the United States. In some cases, we may not be able to obtain patent protection for certain technology outside the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States, even in jurisdictions where we do pursue patent protection. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, even in jurisdictions where we do pursue patent protection or from selling or importing products made using our inventions in and into the United States or other jurisdictions.

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

Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

The ongoing conflict in Ukraine and related sanctions could significantly devalue our Russian and Ukrainian patents. Recent Russian decrees may significantly limit our ability to enforce Russian patents. We cannot predict when or how this situation will change.

Reliance on third parties requires us to share our proprietary information, which increases the possibility that such information will be misappropriated or disclosed.

Because we rely on third parties to develop and manufacture etripamil and any future product candidates, or if we collaborate with third parties for the development or commercialization of etripamil or any future product candidates, we must, at times, share proprietary information with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, consulting agreements or other similar agreements with our advisors, employees, third-party contractors and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information. Despite the contractual provisions employed when working with third parties, the need to share confidential information increases the risk that such information becomes known by our competitors, is inadvertently incorporated into the technology of others, or is disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how, a competitor's discovery of our know-how or other unauthorized use or disclosure could have an adverse effect on our business and results of operations.

In addition, these agreements typically restrict the ability of our advisors, employees, third-party contractors and consultants to publish data potentially relating to our know-how. Despite our efforts to protect our know-how, we may not be able to prevent the unauthorized disclosure or use of our technical know-how by the parties to these agreements. Moreover, we cannot guarantee that we have entered into such agreements with each party that may have or have had access to our confidential information or proprietary technology and processes. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. If any of the collaborators, scientific advisors, employees, contractors and consultants who are parties to these agreements breaches or violates the terms of any of these agreements, we may not have adequate remedies for any such breach or violation. Moreover, if confidential information that is licensed or disclosed to us by our partners, collaborators, or others is inadvertently disclosed or subject to a breach or violation, we may be exposed to liability to the owner of that confidential information. Enforcing a claim that a third-party illegally obtained and is using our proprietary information, like patent litigation, is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect proprietary information.

Any trademarks we may obtain may be infringed or successfully challenged, resulting in harm to our business.

We expect to rely on trademarks as one means to distinguish any of our product candidates that are approved for marketing from the products of our competitors. We have not yet selected trademarks for etripamil and have not yet begun the process of applying to register trademarks for etripamil or any other product candidate. Once we select trademarks and apply to register them, our trademark applications may not be approved. Third parties may oppose our trademark applications or otherwise challenge our use of the trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our products, which could result in loss of brand recognition and could require us to devote resources to advertising and marketing new brands. Our competitors may infringe our trademarks, and we may not have adequate resources to enforce our trademarks.

In addition, any proprietary name we propose to use with etripamil or any future product candidate in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of the potential for confusion with other product names. If the FDA objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable proprietary product name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA.

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

In addition to seeking patent and trademark protection for etripamil and any future product candidate, we also rely on unpatented know-how, technology and other proprietary information, to maintain our competitive position. We seek to protect our proprietary information, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, 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 disclose our proprietary information. Monitoring unauthorized uses and disclosures of our intellectual property is difficult, and we do not know whether the steps we have taken to protect our intellectual property will be effective. In addition, we may not be able to obtain adequate remedies for any such breaches. Enforcing a claim that a party illegally disclosed or misappropriated proprietary information 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, our competitors may independently develop knowledge, methods and know-how equivalent to our proprietary information. Competitors could purchase our products and replicate some or all of the competitive advantages we derive from our development efforts for technologies on which we do not have patent protection. If any of our proprietary information 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 proprietary information were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

We also seek to preserve the integrity and confidentiality of our data and other confidential information by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached and detecting the disclosure or misappropriation of confidential information and enforcing a claim that a party illegally disclosed or misappropriated confidential information is difficult, expensive and time-consuming, and the outcome is unpredictable. Further, we may not be able to obtain adequate remedies for any breach. In addition, our confidential information may otherwise become known or be independently discovered by competitors, in which case 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.

Risks Related to Our Business Operations, Employee Matters and Managing Growth

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on our President and Chief Executive Officer, Joseph Oliveto, our Chief Medical Officer, David Bharucha, our Chief Commercial Officer, Lorenz Muller and our Chief Financial Officer, Amit Hasija. Each of these officers may currently terminate their employment with us at any time. The loss of the services of any of these persons could impede the achievement of our research, development and commercialization objectives. We do not currently maintain “key person” life insurance on the lives of our executives or any of our employees other than on our President and Chief Executive Officer, Joseph Oliveto.

Recruiting and retaining qualified scientific and clinical personnel and, if we progress the development of any of our product candidates, commercialization, manufacturing and sales and marketing personnel, will be critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize our product candidates. Competition to hire from

this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high-quality personnel, our ability to pursue our growth strategy will be limited.

We may expand our organization in the future, and we may experience difficulties in managing this growth, which could disrupt our operations.

As the clinical development of etripamil progresses and as we expand our pipeline, we may, in the future, experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of research, drug development, regulatory affairs and, if etripamil or any future product candidates receives marketing approval, sales, marketing and distribution. To manage any future growth, we will be required to continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with growth, we may not be able to effectively manage any expansion of our operations or recruit and train additional qualified personnel. Any expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a significant disruption of our product development programs and can lead to adverse consequences, including but not limited to regulatory investigations or actions; litigation; fines and penalties; reputational harm; loss of revenue or profits; loss of customers or sales; disruption of our business operations.

In the ordinary course of our business, we and the third parties upon which we rely, process proprietary, confidential, and sensitive data, including personal data (such as health-related data), intellectual property and trade secrets (collectively, “sensitive information”). Our internal computer systems and those of our current and any future collaborators and other contractors or consultants are vulnerable to a variety of evolving threats, including but not limited to damage from malicious code (such as computer viruses and worms), unauthorized access, natural disasters, terrorism, war, social-engineering attacks (including through deep fakes, which may be increasingly more difficult to identify as fake, and phishing attacks), malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks, credential stuffing attacks, credential harvesting, personnel misconduct or error, ransomware attacks, supply-chain attacks, software bugs, server malfunctions, software or hardware failures, loss of data or other information technology assets, adware, attacks enhanced or facilitated by AI, telecommunication and electrical failures, and other similar threats. In particular, severe ransomware attacks are becoming increasingly prevalent and can lead to significant interruptions in our operations, ability to provide our products or services, loss of sensitive data and income, reputational harm, and diversion of funds. Extortion payments may alleviate the negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments. Cyber-attacks are increasing in their frequency, sophistication, and intensity, and have become increasingly difficult to detect. Cyber-attacks, malicious internet-based activity, online and offline fraud, and other similar activities can affect service reliability and threaten the confidentiality, integrity, and availability of information. Cyber-attacks also could include phishing attempts or e-mail fraud to cause payments or information to be transmitted to an unintended recipient.

Some actors now engage and are expected to continue to engage in cyber-attacks, including without limitation nation-state actors for geopolitical reasons and in conjunction with military conflicts and defense activities. During times of war and other major conflicts, we, the third parties upon which we rely, may be vulnerable to a heightened risk of these attacks, including retaliatory cyber-attacks, that could materially disrupt our systems and operations, supply chain, and ability to produce, sell and distribute our goods and services. A significant system failure, accident or security could cause interruptions in our operations, and could result in a disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from completed or future clinical trials by us or our CROs could result in delays in our regulatory

approval efforts and significantly increase our costs to recover or reproduce the data. Additionally, any such event that leads to unauthorized access, use or disclosure of personal data, including personal data regarding our patients or employees, could harm our reputation, cause us not to comply with federal and/or state breach notification laws and foreign law equivalents and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal data. Security breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. Applicable data privacy and security obligations may require us to notify relevant stakeholders, including affected individuals, customers, regulators, and investors, of security incidents. Such disclosures are costly, and the disclosure or the failure to comply with such requirements could lead to adverse consequences. While we have implemented security measures designed to protect our information technology systems and infrastructure and detect, mitigate, and remediate vulnerabilities in our information systems (such as our hardware and/or software, including that of third parties upon which we rely), such measures may not detect or prevent service interruptions or security breaches that could adversely affect our business and to the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of sensitive information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our product candidates could be delayed. We may expend significant resources or modify our business activities (including our clinical trial activities) to try to protect against security incidents. Further, we may experience delays in developing and deploying remedial measures and patches designed to address identified vulnerabilities.

Future or past business transactions (such as acquisitions or integrations) could expose us to additional cybersecurity risks and vulnerabilities, as our systems could be negatively affected by vulnerabilities present in acquired or integrated entities' systems and technologies. Furthermore, we may discover security issues that were not found during due diligence of such acquired or integrated entities, and it may be difficult to integrate companies into our information technology environment and security program.

We rely on third-party service providers and technologies to operate critical business systems to process sensitive information in a variety of contexts, including, without limitation, cloud-based infrastructure, data center facilities, encryption and authentication technology, employee email, content delivery to customers, and other functions. Our ability to monitor these third parties' information security practices is limited, and these third parties may not have adequate information security measures in place. If our third-party service providers experience a security incident or other interruption, we could experience adverse consequences. While we may be entitled to damages if our third-party service providers fail to satisfy their privacy or security-related obligations to us, any award may be insufficient to cover our damages, or we may be unable to recover such an award.

If we (or a third party upon whom we rely) experience a security incident or are perceived to have experienced a security incident, we may experience adverse consequences, such as government enforcement actions (for example, investigations, fines, penalties, audits, and inspections); additional reporting requirements and/or oversight; restrictions on processing sensitive information (including personal data); litigation (including class claims); indemnification obligations; negative publicity; reputational harm; monetary fund diversions; diversion of management attention; interruptions in our operations (including availability of data); financial loss; and other similar harms. Security incidents and attendant consequences may prevent or cause customers to stop using our services, deter new customers from using our services, and negatively impact our ability to grow and operate our business. Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations.

In addition to experiencing a security incident, third parties may gather, collect, or infer sensitive information about us from public sources, data brokers, or other means that reveals competitively sensitive details about our organization and could be used to undermine our competitive advantage or market position. Additionally, sensitive information of the Company could be leaked, disclosed, or revealed as a result of or in connection with our employees', personnel's, or vendors' use of generative AI technologies.

We are subject to stringent and evolving U.S. and foreign laws, regulations, and rules, contractual obligations, industry standards, policies and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to regulatory investigations or actions; litigation (including class claims) and mass arbitration demands; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; and other adverse business consequences.

In the ordinary course of business, we collect, receive, store, process, generate, use, transfer, disclose, make accessible, protect, secure, dispose of, transmit, and share (collectively, “process”) personal data and other sensitive information, including proprietary and confidential business data, trade secrets, intellectual property, data we collect about trial participants in connection with clinical trials and sensitive third-party data. Our data processing activities subject us to numerous data privacy and security obligations, such as various laws, regulations, guidance, industry standards, external and internal privacy and security policies, contractual requirements, and other obligations relating to data privacy and security. In the United States, federal, state, and local governments have enacted numerous data privacy and security laws, including data breach notification laws, personal data privacy laws, consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), and other similar laws (e.g., wiretapping laws). In the past few years, numerous U.S. states—including California, Virginia, Colorado, Connecticut, and Utah—have enacted comprehensive privacy laws that impose certain obligations on covered businesses, including providing specific disclosures in privacy notices and affording residents with certain rights concerning their personal data. The exercise of these rights may impact our business and ability to provide our products and services. Certain states also impose stricter requirements for processing certain personal data, including sensitive information, such as conducting data privacy impact assessments. These state laws allow for statutory fines for noncompliance. For example, the California Consumer Privacy Act of 2018, as amended by the California Privacy Rights Act of 2020 (“CPRA”), (collectively, “CCPA”) applies to personal data of consumers, business representatives, and employees who are California residents, and requires businesses to provide specific disclosures in privacy notices and honor requests of such individuals to exercise certain privacy rights. The CCPA provides for fines of up to \$7,500 per intentional violation and allows private litigants affected by certain data breaches to recover significant statutory damages. Although the CCPA exempts some data processed in the context of clinical trials, the CCPA increases compliance costs and potential liability with respect to other personal data we maintain about California residents. Similar laws are being considered in several other states, as well as at the federal and local levels, and we expect more states to pass similar laws in the future. While these states, like the CCPA, also exempt some data processed in the context of clinical trials, these developments further complicate compliance efforts, and increase legal risk and compliance costs for us, the third parties upon whom we rely.

Outside the United States, an increasing number of laws, regulations, and industry standards govern data privacy and security. For example, the European Union’s General Data Protection Regulation (“EU GDPR”), the United Kingdom’s GDPR (“UK GDPR”), and China’s Personal Information Protection Law (“PIPL”) impose strict requirements for processing personal data. Additionally, in Canada, the Personal Information Protection and Electronic Documents Act (“PIPEDA”) and various related provincial laws, as well as Canada’s Anti-Spam Legislation (“CASL”), may apply to our operations.

We anticipate seeking regulatory approval for, and commercialize, etripamil for the treatment of PSVT in Europe. We may also elect to do so for future product candidates. We are conducting clinical trial activities in Europe, which subjects us to European data protection laws, including the EU GDPR and the UK GDPR. The GDPR establishes requirements applicable to the processing of personal data (i.e., data which identifies an individual or from which an individual is identifiable). The GDPR creates significant and complex compliance burdens for companies such as: limiting permitted processing of personal data to only that which is necessary for specified, explicit and legitimate purposes; requiring the establishment a legal basis for processing personal data; expressly confirming that ‘pseudonymized’ or key-coded data constitutes personal data to which the GDPR applies; creating obligations for controllers and processors to appoint data protection officers in certain circumstances; increasing transparency obligations to data subjects for controllers (including presentation of certain information in a concise, intelligible and easily accessible form about how their personal data is used and their rights vis-à-vis that data and its use); introducing the obligation to carry out so-called data protection impact assessments in certain circumstances; establishing limitations on collection and retention of personal data through ‘data minimization’ and ‘storage limitation’ principles; establishing obligations to implement ‘privacy by design’; introducing obligations to honor increased rights for data subjects (such as rights for individuals to be ‘forgotten,’ rights to data portability, rights to object etc. in certain circumstances); formalizing a heightened and codified standard of data subject

consent; establishing obligations to implement certain technical and organizational safeguards to protect the security and confidentiality of personal data; introducing obligations to agree to certain specific contractual terms and to take certain measures when engaging third-party processors and joint controllers; introducing the obligation to provide notice of certain significant personal data breaches to the relevant supervisory authority(ies) and affected individuals; and mandating the appointment of representatives in the United Kingdom and/or European Union in certain circumstances. The processing of “special category personal data”, such as health information, may also impose heightened compliance burdens under the GDPR. The GDPR has robust regulatory enforcement and penalties for noncompliance, including fines of up to €20 million Euros under the EU GDPR, 17.5 million pounds sterling under the UK GDPR, or, in each case 4% of global annual revenue of any noncompliant company for the preceding financial year, whichever is higher or private litigation related to processing of personal data brought by classes of data subjects or consumer protection organizations authorized at law to represent their interests. In addition to administrative fines, a wide variety of other potential enforcement powers are available to competent supervisory authorities in respect of potential and suspected violations of the GDPR, including extensive audit and inspection rights, and powers to order temporary or permanent bans on all or some processing of personal data carried out by noncompliant actors. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. There may be circumstances under which a failure to comply with GDPR, or the exercise of individual rights under the GDPR, would limit our ability to utilize clinical trial data collected on certain subjects. The GDPR will likely impose additional responsibility and liability in relation to our processing of personal data. This may be onerous and materially adversely affect our business, financial condition, results of operations and prospects.

A particular issue presented by the GDPR is the restriction on transfers of personal data from Europe to the United States and most other countries unless the parties to the transfer have implemented specific safeguards to protect the transferred personal data. One of the primary safeguards allowing U.S. companies to import personal data from Europe is the European Commission’s Standard Contractual Clauses and we have relied on Standard Contractual Clauses to comply with the GDPR’s restrictions on transfer of personal data out of Europe. However, in July 2020 the Court of Justice of the European Union, or CJEU, in a case known colloquially as “Schrems II” raised questions about whether the Standard Contractual Clauses can lawfully be used for personal data transfers from Europe to the United States or other third countries that are not the subject of an adequacy decision of the European Commission. While the CJEU upheld the adequacy of the Standard Contractual Clauses in principle in Schrems II, it made clear that reliance on those Clauses alone may not necessarily be sufficient in all circumstances. Use of the Standard Contractual Clauses must now be assessed on a case-by-case basis taking into account the legal regime applicable in the destination country, in particular regarding applicable surveillance laws and relevant rights of individuals with respect to the transferred data. In the context of any given transfer, where the legal regime applicable in the destination country may or does conflict with the intended operation of the Standard Contractual Clauses and/or applicable European law, the decision in Schrems II and subsequent draft guidance from the European Data Protection Board, or EDPB, would require the parties to that transfer to implement certain supplementary technical, organizational and/or contractual measures to rely on the Standard Contractual Clauses as a compliant ‘transfer mechanism.’ However, the aforementioned draft guidance from the EDPB on such supplementary technical, organizational and/or contractual measures appears to conclude that no combination of such measures could be sufficient to allow effective reliance on the Standard Contractual Clauses in the context of transfers of personal data ‘in the clear’ to recipients in countries where the power granted to public authorities to access the transferred data goes beyond that which is ‘necessary and proportionate in a democratic society’ – which may, following the CJEU’s conclusions in Schrems II on relevant powers of United States public authorities and commentary in that draft EDPB guidance, include the United States in certain circumstances (e.g., where Section 702 of the US Foreign Intelligence Surveillance Act applies). At present, there are few, viable alternatives to the Standard Contractual Clauses including the UK’s International Data Transfer Agreement / Addendum, and the EU-U.S. Data Privacy Framework and the UK extension thereto (which allows for transfers to relevant U.S.-based organizations who self-certify compliance and participate in the Framework). These mechanisms are subject to legal challenges, and there is no assurance that we can satisfy or rely on these measures to lawfully transfer personal data to the United States. As such, if we are unable to implement a valid solution for personal data transfers from Europe, including, we will face increased exposure to regulatory actions, substantial fines and injunctions against processing personal data from Europe. Inability to import personal data from Europe may also: restrict our activities in Europe; limit our ability to collaborate with partners as well as other service providers, contractors and other companies subject to European data protection laws; and require us to increase our data processing capabilities in Europe at significant expense. Restrictions on our ability to import personal data from Europe could therefore impact our

clinical trial activities in Europe and limit our ability to collaborate with CROs and other third parties subject to European data protection laws. Additionally, other countries outside of Europe have enacted or are considering enacting similar cross-border data transfer restrictions and laws requiring local data residency, which could increase the cost and complexity of delivering our services and operating our business. The type of challenges we face in Europe will likely also arise in other jurisdictions that adopt laws similar in construction to the GDPR or regulatory frameworks of equivalent complexity.

In addition to data privacy and security laws, we are contractually subject to industry standards adopted by industry groups and we are, or may become subject to such obligations in the future. We are also bound by contractual obligations related to data privacy and security, and our efforts to comply with such obligations may not be successful.

We publish privacy policies, marketing materials and other statements, such as compliance with certain certifications or self-regulatory principles, regarding data privacy and security. If these policies, materials or statements are found to be deficient, lacking in transparency, deceptive, unfair, or misrepresentative of our practices, we may be subject to investigation, enforcement actions by regulators or other adverse consequences.

Obligations related to data privacy and security (and consumers' data privacy expectations) are quickly changing, becoming increasingly stringent, and creating uncertainty. Additionally, these obligations may be subject to differing applications and interpretations, which may be inconsistent or conflict among jurisdictions. Preparing for and complying with these obligations requires us to devote significant resources, which may necessitate changes to our services, information technologies, systems, and practices and to those of any third parties that process personal data on our behalf. In addition, these obligations may require us to change our business model. We may at times fail (or be perceived to have failed) in our efforts to comply with our data privacy and security obligations. Moreover, despite our efforts, our personnel or third parties on whom we rely may fail to comply with such obligations, which could negatively impact our business operations. If we or the third parties on which we rely fail, or are perceived to have failed, to address or comply with applicable data privacy and security obligations, we could face significant consequences, including but not limited to: government enforcement actions (e.g., investigations, fines, penalties, audits, inspections, and similar); litigation (including class-action claims) and mass arbitration demands; additional reporting requirements and/or oversight; bans on processing personal data; orders to destroy or not use personal data; and imprisonment of company officials. In particular, plaintiffs have become increasingly more active in bringing privacy-related claims against companies, including class claims and mass arbitration demands. Some of these claims allow for the recovery of statutory damages on a per violation basis, and, if viable, carry the potential for monumental statutory damages, depending on the volume of data and the number of violations. Any of these events could have a material adverse effect on our reputation, business, or financial condition, including but not limited to: loss of customers; interruptions or stoppages in our business operations including, as relevant, clinical trials; inability to process personal data or to operate in certain jurisdictions; limited ability to develop or commercialize our products; expenditure of time and resources to defend any claim or inquiry; adverse publicity; or substantial changes to our business model or operations.

Our employees and personnel may use generative artificial intelligence ("AI") technologies to perform their work, and the disclosure and use of personal data in generative AI technologies is subject to various privacy laws and other privacy obligations. Governments have passed and are likely to pass additional laws regulating generative AI. Our use of this technology could result in additional compliance costs, regulatory investigations and actions, and lawsuits. If we are unable to use generative AI, it could make our business less efficient and result in competitive disadvantages.

Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in other jurisdictions, provide accurate information to the FDA and other regulatory authorities, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, 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, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing,

discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct also could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could result in significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participating in government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm and the curtailment or restructuring of our operations, any of which could have a negative impact on our business, financial condition, results of operations and prospects.

Our current or future acquisitions or strategic collaborations could increase our capital requirements, dilute our shareholders, cause us to incur debt or assume contingent liabilities and subject us to other risks.

We actively search for and continually evaluate various acquisition and strategic collaboration opportunities, including licensing or acquiring complementary drugs, intellectual property rights, technologies or businesses, as deemed appropriate to carry out our business plan. Our collaborations, including any future acquisitions or strategic partnerships, may entail numerous risks, including:

- increased operating expenses and cash requirements;
- the assumption of additional indebtedness or contingent liabilities;
- assimilation of operations, intellectual property and drugs of an acquired company, including difficulties associated with integrating new personnel;
- the diversion of our management's attention from our existing drug programs and initiatives in pursuing such a strategic partnership, merger or acquisition;
- retention of key employees, the loss of key personnel, and uncertainties in our ability to maintain key business relationships;
- risks and uncertainties associated with the other party to such a transaction, including the prospects of that party and their existing drugs or product candidates and regulatory approvals; and
- our inability to generate revenue from acquired technology and/or drugs sufficient to meet our objectives in undertaking the acquisition or even to offset the associated acquisition and maintenance costs.

In addition, in connection with our current or future acquisitions or strategic partnerships, we may issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense. Moreover, we may not be able to locate suitable future acquisition opportunities, and this inability could impair our ability to grow or obtain access to technology or drugs that may be important to the development of our business.

Risks Related to Ownership of Our Common Shares

The market price of our common shares has been and may continue to be volatile and fluctuate substantially, and you could lose all or part of your investment.

The market price of our common shares has been and may continue to be highly volatile and could be subject to wide fluctuations in price in response to various factors, many of which are beyond our control. Since our initial public offering which occurred in May 2019, through March 21, 2024, the price of our common shares has ranged from \$1.33 per share to \$27.15 per share. The stock market in general and the market for biopharmaceutical and pharmaceutical companies in particular, has experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common shares at or above the price paid for the shares. In addition to the factors discussed in this “Risk Factors” section and elsewhere in this Annual Report on Form 10-K, the market price for our common shares may be influenced by the following:

- the commencement, enrollment or results of our planned or future clinical trials of etripamil and any future product candidates or those of our competitors;
- the success of competitive drugs or therapies;
- regulatory or legal developments in the United States and other countries;
- the success of competitive products or technologies;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to etripamil and any future product candidates or clinical development programs;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- our inability to obtain or delays in obtaining adequate drug supply for any approved drug or inability to do so at acceptable prices;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or shareholder litigation;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems, including coverage and adequate reimbursement for any approved drug;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, political, and market conditions, including deteriorating market conditions due to investor concerns regarding inflation and Russian hostilities in Ukraine, the Israel-Hamas war, and overall fluctuations in the financial markets in the United States and abroad; and

- investors' general perception of us and our business.

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

Some companies that have experienced volatility in the trading price of their shares have been the subject of securities class action litigation. Any lawsuit to which we are a party, with or without merit, may result in an unfavorable judgment. We also may decide to settle lawsuits on unfavorable terms. Any such negative outcome could result in payments of substantial damages or fines, damage to our reputation or adverse changes to our business practices. Defending against litigation is costly and time-consuming, and could divert our management's attention and our resources. Furthermore, during the course of litigation, there could be negative public announcements of the results of hearings, motions or other interim proceedings or developments, which could have a negative effect on the market price of our common shares.

Unstable market and economic conditions, including as a result of recent bank closures, public health crises or geopolitical tensions such as the Russia-Ukraine and/or the Israel-Hamas war, may have serious adverse consequences on our business, financial condition and share price.

The global economy, including credit and financial markets, has experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates, increases in inflation rates and uncertainty about economic stability. For example, the macroeconomic uncertainty and volatile business environment have resulted in ongoing inflation, volatility in the capital markets, significantly reduced liquidity and credit availability, decreases in consumer demand and confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. Our general business strategy may be materially or adversely impacted if these unpredictable and unstable market conditions continue. Additionally, the Russia-Ukraine and the Israel-Hamas wars have created extreme volatility in the global capital markets and are expected to have further global economic consequences, including potential disruptions of the global supply chain, manufacturing and energy markets. Any such volatility and disruptions may have adverse consequences on us or the third parties on whom we rely. If the equity and credit markets deteriorate, including as a result of inflation expectations, recent bank closures, the changing interest rate environment, political unrest or war, it may make any necessary debt or equity financing more difficult to obtain in a timely manner or on favorable terms, more costly or more dilutive. Increased inflation rates can adversely affect us by increasing our costs, including labor and employee benefit costs. Any significant increases in inflation and related increases in interest rates could have a material adverse effect on our business, results of operations and financial condition.

Our common shares are thinly traded and our shareholders may be unable to sell their shares quickly or at market price.

Although we have had periods of high volume daily trading in our common shares, generally our shares are thinly traded. As a consequence of this lack of liquidity, the trading of relatively small quantities of shares by our shareholders may disproportionately influence the price of those shares in either direction. The price for our shares could, for example, decline significantly in the event that a large number of our common shares are sold on the market without commensurate demand, as compared to a seasoned issuer that could better absorb those sales without adverse impact on its share price.

Concentration of ownership of our common shares among our existing executive officers, directors and principal shareholders may prevent new investors from influencing significant corporate decisions.

Based upon our common shares outstanding as of December 31, 2023, our executive officers, directors and shareholders who owned more than 5% of our outstanding common shares, in the aggregate, beneficially owned shares representing 31.3% of our outstanding common shares. If our executive officers, directors and shareholders who owned more than 5% of our outstanding common shares acted together, they may be able to significantly influence all matters requiring

shareholder approval, including the election and removal of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. The concentration of voting power and transfer restrictions could delay or prevent an acquisition of our Company on terms that other shareholders may desire or result in the management of our Company in ways with which other shareholders disagree.

If research analysts do not publish research or reports, or publish unfavorable research or reports, about us, our business or our market, our share price and trading volume could decline.

The trading market for our common shares will be influenced by the research and reports that industry or financial analysts publish about us or our business. Equity research analysts may discontinue research coverage of our common shares, and such lack of research coverage may adversely affect the market price of our common shares. We do not have any control over the analysts or the content and opinions included in their reports. The price of our shares could decline if one or more equity research analysts downgrade our shares or issue other unfavorable commentary or research about us. If one or more equity research analysts ceases coverage of us or fails to publish reports on us regularly, demand for our shares could decrease, which in turn could cause the trading price or trading volume of our common shares to decline.

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

You should not rely on an investment in our common shares to provide dividend income. We have never declared or paid cash dividends on our share capital. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of any future debt agreements or preferred equity may preclude us from paying dividends. As a result, capital appreciation, if any, of our common shares will be your sole source of gain for the foreseeable future. Investors seeking cash dividends should not purchase our common shares.

We have broad discretion in the use of our cash and cash equivalents and may use them in ways in which you do not agree or in ways that do not increase the value of your investment.

Our management has broad discretion in the application of our cash and cash equivalents and could spend these funds in ways that do not improve our results of operations or enhance the value of our common shares. The failure by our management to apply these funds effectively could result in financial losses that could have a negative impact on our business, causing the price of our common shares to decline and delay the development of our product candidates. Pending their use, we may invest our cash and cash equivalents, in a manner that does not produce income or that loses value.

If we are a passive foreign investment company, there could be adverse U.S. federal income tax consequences to U.S. Holders (as defined below).

Based on the nature and composition of our income, assets, activities and market capitalization, we believe that we were not classified as a passive foreign investment company, or PFIC, for our taxable year ending December 31, 2023. If we are a PFIC for the current taxable year, or any subsequent taxable years, we intend to annually furnish U.S. Holders, upon request, a “PFIC Annual Information Statement,” with the information required to allow U.S. Holders to make a “qualified electing fund” election, or “QEF Election” for United States federal income tax purposes. No assurances regarding our PFIC status can be provided for any past, current or future taxable years. The determination of whether we are a PFIC is a fact-intensive determination made on an annual basis and the applicable law is subject to varying interpretation. In particular, the characterization of our assets as active or passive may depend in part on our current and intended future business plans, which are subject to change. In addition, the total value of our assets for PFIC testing purposes may be determined in part by reference to the market price of our common shares from time to time, which may fluctuate considerably. As a result, our PFIC status may change from year to year. Further, our status as a PFIC depends on the composition of our income which will depend on the transactions we enter into in the future and our corporate structure. The composition of our income and assets is also affected by how, and how quickly, we spend the cash we raise in any offering.

If we are a PFIC, U.S. Holders (as defined below) may be subject to adverse U.S. federal income tax consequences, such as ineligibility for preferential tax rates for individuals on capital gains or on actual or deemed dividends, interest charges on certain taxes treated as deferred, and additional reporting requirements under U.S. federal income tax laws and regulations.

A “U.S. Holder” is a holder of our common shares who, for U.S. federal income tax purposes, is: (i) an individual who is a citizen or resident of the United States; (ii) a corporation, or another entity taxable as a corporation, created or organized in or under the laws of the United States, any state therein or the District of Columbia; (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source; or (iv) a trust if (1) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have authority to control all substantial decisions of the trust or (2) the trust has a valid election to be treated as a U.S. person under applicable U.S. Treasury Regulations.

If a U.S. Holder is directly, indirectly, or constructively owns at least 10% of our common shares, such holder may be subject to adverse U.S. federal income tax consequences.

If a U.S. Holder is treated as owning (directly, indirectly or constructively) at least 10% of the value or voting power of our common shares, such U.S. Holder may be treated as a “United States shareholder” with respect to each “controlled foreign corporation” in our group (if any). Because our group includes at least one U.S. subsidiary (Milestone Pharmaceuticals USA Inc.), if we were to form or acquire any non-U.S. subsidiaries in the future, they may be treated as controlled foreign corporations. A United States shareholder of a controlled foreign corporation may be required to annually report and include in its U.S. taxable income its pro rata share of “Subpart F income,” “global intangible low-taxed income” and investments in U.S. property by that controlled foreign corporation, regardless of whether that controlled foreign corporation, or we, make any distributions. An individual that is a United States shareholder with respect to a controlled foreign corporation generally would not be allowed certain tax deductions or foreign tax credits that would be allowed to a United States shareholder that is a U.S. corporation. We cannot provide any assurances that we will assist investors in determining whether any non-U.S. subsidiaries that we may form or acquire in the future will be treated as controlled foreign corporations or whether any such investor would be treated as a United States shareholder with respect to any of such controlled foreign corporations. Further, we cannot provide any assurances that we will furnish to any investor information that may be necessary to comply with the reporting and tax paying obligations discussed above. Failure to comply with these reporting obligations may subject a U.S. Holder to significant monetary penalties and may extend the statute of limitations with respect to its U.S. federal income tax return for the year for which reporting was due. U.S. Holders should consult their tax advisors regarding the potential application of these rules to their investment in our common shares.

Future changes to tax laws could materially adversely affect our Company and reduce net returns to our shareholders.

Our tax treatment is subject to the enactment of, or changes in, tax laws, regulations and treaties, or the interpretation thereof, tax policy initiatives and reforms under consideration and the practices of tax authorities in jurisdictions in which we operate, including those related to the Organization for Economic Co-Operation and Development’s, or OECD, Base Erosion and Profit Shifting, or BEPS, Project, the European Commission’s state aid investigations and other initiatives. Such changes may include (but are not limited to) the taxation of operating income, investment income, dividends received or (in the specific context of withholding tax) dividends paid. We are unable to predict what tax reform may be proposed or enacted in the future or what effect such changes would have on our business, but such changes, to the extent they are brought into tax legislation, regulations, policies or practices, could affect our financial position and overall or effective tax rates in the future in countries where we have operations, reduce post-tax returns to our shareholders, and increase the complexity, burden and cost of tax compliance.

For example, the Tax Act enacted many significant changes to the U.S. tax laws. Future guidance from the Internal Revenue Service, or the IRS, and other tax authorities with respect to the Tax Act may affect us, and certain aspects of the Tax Act could be repealed or modified in future legislation. In addition, it is uncertain if and to what extent various states will conform to 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 under the Tax Act or future reform legislation 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. We urge you to consult with your legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common shares.

Tax authorities may disagree with our positions and conclusions regarding certain tax positions, resulting in unanticipated costs, taxes or non-realization of expected benefits.

A tax authority may disagree with tax positions that we have taken, which could result in increased tax liabilities. For example, the Canadian Revenue Agency, the IRS or another tax authority could challenge our allocation of income by tax jurisdiction and the amounts paid between our affiliated companies pursuant to our intercompany arrangements and transfer pricing policies, including amounts paid with respect to our intellectual property development. Similarly, a tax authority could assert that we are subject to tax in a jurisdiction where we believe we have not established a taxable connection, often referred to as a “permanent establishment” under international tax treaties, and such an assertion, if successful, could increase our expected tax liability in one or more jurisdictions. A tax authority may take the position that material income tax liabilities, interest and penalties are payable by us, in which case, we expect that we might contest such assessment. Contesting such an assessment may be lengthy and costly and if we were unsuccessful in disputing the assessment, the result could increase our anticipated effective tax rate.

We are an “emerging growth company,” and the reduced disclosure requirements applicable to emerging growth companies may make our common shares less attractive to investors.

We are an “emerging growth company,” or EGC, as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- not being required to hold a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved.

We currently take advantage of some or all of these reporting exemptions and may continue to until we are no longer an EGC. We will remain an EGC until the earlier of (i) December 31, 2024, (ii) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.235 billion, (iii) the last day of the first fiscal year in which we are deemed to be a large accelerated filer, which means the market value of our common shares that is held by non-affiliates exceeds \$700 million as of the prior June 30th, and (iv) the date on which we have issued more than \$1.0 billion in non-convertible debt during the prior three-year period. We cannot predict whether investors will find our common shares less attractive because we will rely on these exemptions. If some investors find our common shares less attractive as a result, there may be a less active trading market for our common shares and our share price may be more volatile.

In addition, under Section 107(b) of the JOBS Act, EGCs can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not EGCs.

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

As a public company, and particularly after we are no longer an EGC, we are incurring, and expect to continue to incur, significant legal, accounting and other expenses. In addition, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and rules subsequently implemented by the SEC and The Nasdaq Stock Market LLC have imposed various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations have increased, and will continue to increase, our legal and financial compliance costs and make some activities more time-consuming and costly.

While we remain an EGC, we are not required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. However, pursuant to Section 404 of the Sarbanes Oxley Act, or Section 404, in the future we will be required to furnish an attestation on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 (b), we will be engaged in additional internal processes to document and evaluate our internal control over financial reporting, which will be both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, our independent registered public accounting firm may determine we have a material weakness or significant deficiency in our internal control over financial reporting once such firm begin its Section 404 (b) reviews in the future, there is a risk that neither we nor our independent registered public accounting firm will be able to conclude within the prescribed timeframe that our internal control over financial reporting is effective as required by Section 404 (b). This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our consolidated financial statements.

Because we are a Canadian company, it may be difficult to serve legal process or enforce judgments against us.

We are a domestic filer in the United States; however, we are incorporated and have our corporate headquarters in Canada. In addition, while many of our directors and officers reside in the United States, several of them reside outside of the United States. Accordingly, service of process upon us may be difficult to obtain within the United States. Furthermore, because substantially all of our assets are located outside the United States, any judgment obtained in the United States against us, including one predicated on the civil liability provisions of the U.S. federal securities laws, may not be collectible within the United States. Therefore, it may not be possible to enforce those actions against us.

In addition, it may be difficult to assert U.S. securities law claims in original actions instituted in Canada. Canadian courts may refuse to hear a claim based on an alleged violation of U.S. securities laws against us or these persons on the grounds that Canada is not the most appropriate forum in which to bring such a claim. Even if a Canadian court agrees to hear a claim, it may determine that Canadian law and not U.S. law is applicable to the claim. If U.S. law is found to be applicable, the content of applicable U.S. law must be proved as a fact, which can be a time-consuming and costly process. Certain matters of procedure will also be governed by Canadian law. Furthermore, it may not be possible to subject foreign persons or entities to the jurisdiction of the courts in Canada. Similarly, to the extent that our assets are located in Canada, investors may have difficulty collecting from us any judgments obtained in the U.S. courts and predicated on the civil liability provisions of U.S. securities provisions.

We are governed by the corporate laws of Québec, which in some cases have a different effect on shareholders than the corporate laws of Delaware.

We are governed by the Business Corporations Act (Québec), or the QBCA, and other relevant laws, which may affect the rights of shareholders differently than those of a company governed by the laws of a U.S. jurisdiction, and may, together with our charter documents, have the effect of delaying, deferring or discouraging another party from acquiring control of us by means of a tender offer, a proxy contest or otherwise, or may affect the price an acquiring party would be willing to

offer in such an instance. The material differences between the QBCA and Delaware General Corporation Law, or the DGCL, that may have the greatest such effect include but are not limited to the following: (i) for material corporate transactions (such as mergers and amalgamations, other extraordinary corporate transactions or amendments to our articles), the QBCA generally requires a two-thirds majority vote by shareholders, whereas the DGCL generally only requires a majority vote; and (ii) under the QBCA, a holder of 5% or more of our common shares can requisition a special meeting of shareholders, whereas such right does not exist under the DGCL.

Our bylaws and certain Canadian legislation contain provisions that may have the effect of delaying or preventing certain change in control transactions or shareholder proposals.

Certain provisions of our bylaws and certain Canadian legislation, together or separately, could discourage or delay certain change in control transactions or shareholder proposals.

Our bylaws contain provisions that establish certain advance notice procedures for nomination of candidates for election as directors at shareholders' meetings. The BCA requires that any shareholder proposal that includes nominations for the election of directors must be signed by one or more holders of shares representing in the aggregate not less than 5% of the shares or 5% of the shares of a class or series of shares of the corporation entitled to vote at the meeting to which the proposal is to be presented.

The *Investment Canada Act* requires that a non-Canadian must file an application for review with the Minister responsible for the *Investment Canada Act* and obtain approval of the Minister prior to acquiring control of a "Canadian business" within the meaning of the *Investment Canada Act*, where prescribed financial thresholds are exceeded. Furthermore, limitations on the ability to acquire and hold our common shares may be imposed by the *Competition Act* (Canada). This legislation permits the Commissioner of Competition, or Commissioner, to review any acquisition or establishment, directly or indirectly, including through the acquisition of shares, of control over or of a significant interest in our Company. Otherwise, there are no limitations either under the laws of Canada or Quebec, or in our articles on the rights of non-Canadians to hold or vote our common shares.

Any of these provisions may discourage a potential acquirer from proposing or completing a transaction that may have otherwise presented a premium to our shareholders.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 1C. CYBERSECURITY.

Risk management and strategy

We have implemented and maintain various information security processes designed to identify, assess and manage material risks from cybersecurity threats to our critical computer networks, communications systems, hardware and software, and our critical data, including intellectual property and confidential information that is proprietary, strategic or competitive in nature ("Information Systems and Data").

Our Vice President of Information Technology ("VP of IT") with assistance from our third-party managed services team, legal, quality, finance and human resources, identifies, assesses and manages the Company's cybersecurity threats and risks. The Company identifies and assesses risks from cybersecurity threats by monitoring and evaluating our threat environment using various methods including, for example using manual and automated tools, analyzing reports of threat actors, conducting scans of the threat environment, evaluating threats reported to us and coordinating with law enforcement concerning threats.

Depending on the environment, we implement and maintain various technical, physical, and organizational measures, processes, standards and policies designed to manage and mitigate material risks from cybersecurity threats to our

Information Systems and Data, including, for example: an incident response plan; incident detection and response; disaster recovery and business continuity plans; implementation of security standards; network security controls; access controls; system monitoring; and employee training.

Our assessment and management of material risks from cybersecurity threats are integrated into the Company's overall risk management processes. Cybersecurity risk is addressed as a component of the Company's enterprise risk management program and identified by the Company's senior management team. Also, IT consultants work with management to follow the National Institute of Standards and Technology framework for cybersecurity to mitigate cybersecurity threats that are more likely to lead to a material impact on our business.

We use third-party service providers to assist us from time to time to identify, assess, and manage material risks from cybersecurity threats, including for example, professional services firms including outside legal counsel, cybersecurity consultants, threat intelligence service providers, managed cybersecurity service providers and forensic investigators.

We use third-party service providers to perform a variety of functions throughout our business, such as application providers and hosting companies. We have a vendor management program to manage cybersecurity risks associated with our use of these providers. The program includes security questionnaires, reviews of vendor's written security program and audits. Depending on the nature of the services provided, the sensitivity of the Information Systems and Data at issue, and the identity of the provider, our vendor management process may involve different levels of assessment designed to help identify cybersecurity risks associated with a provider and impose contractual obligations related to cybersecurity on the provider.

For a description of the risks from cybersecurity threats that may materially affect the Company and how they may do so, see our risk factors under Part I. Item 1A. Risk Factors in this Annual Report on Form 10-K, including "Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a significant disruption of our product development programs and can lead to adverse consequences, including but not limited to regulatory investigations or actions; litigation; fines and penalties; reputational harm; loss of revenue or profits; loss of customers or sales; disruption of our business operations."

Governance

Our board of directors and audit committee addresses the Company's cybersecurity risk management as part of its general oversight function. The board of directors' audit committee is responsible for overseeing the Company's cybersecurity risk management processes, including oversight of mitigation of risks from cybersecurity threats.

Our cybersecurity risk assessment and management processes are implemented and maintained by certain Company management, including our Chief Financial Officer and our VP of IT who has over 40 years of experience in information technology and cybersecurity and manages the Company's information technology infrastructure.

The VP of IT is responsible for hiring appropriate personnel, helping to integrate cybersecurity risk considerations into the Company's overall risk management strategy, and communicating key priorities to relevant personnel. The VP of IT is also responsible for approving budgets, helping prepare for cybersecurity incidents, approving cybersecurity processes, and reviewing security assessments and other security-related reports.

Our cybersecurity incident response plan is designed to escalate certain cybersecurity incidents to members of management depending on the circumstances. The VP of IT works with the Company's incident response team to help the Company mitigate and remediate cybersecurity incidents of which they are notified. In addition, the Company's incident response plan includes reporting to the audit committee of the board of directors for certain cybersecurity incidents.

The audit committee receives periodic reports concerning the Company's significant cybersecurity threats and risk and the processes the Company has implemented to address them. The audit committee also receives various reports, summaries or presentations related to cybersecurity threats, risk and mitigation.

ITEM 2. PROPERTIES.

Our headquarters is currently located in Montréal (Québec), Canada and consists of 7,700 square feet of leased office space under a lease that expires in November 2025. We also have a U.S. subsidiary based in Charlotte, North Carolina. We believe that our facilities are adequate to meet our current needs and that additional space can be obtained on commercially reasonable terms as needed.

ITEM 3. LEGAL PROCEEDINGS.

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. We are not currently a party to any material legal proceedings, and we are not aware of any pending or threatened legal proceeding against us that we believe could have an adverse effect on our business, operating results or financial condition.

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 shares began trading on The Nasdaq Global Select Market on May 9, 2019. Our common shares trade under the symbol "MIST". Prior to the commencement of trading on the Nasdaq Global Select Market on May 9, 2019, there was no public market for our common shares.

HOLDERS OF RECORD

As of December 31, 2023, there were 19 holders of record of our common shares, including Cede & Co., a nominee for The Depository Trust Company, or DTC, which holds shares of our common shares on behalf of an indeterminate number of beneficial owners. All of the common shares held by brokerage firms, banks and other financial institutions as nominees for beneficial owners are deposited into participant accounts at DTC, and are considered to be held of record by Cede & Co. as one shareholder. Because many of our shares are held by brokers and other institutions on behalf of shareholders, we are unable to estimate the total number of shareholders represented by these record holders.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock and do not anticipate paying any cash dividends in the foreseeable future. Payment of cash dividends, if any, in the future will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

Recent Sales of Unregistered Securities

None.

Purchase of Equity Securities by the Issuer and Affiliated Purchasers

None.

Securities Authorized for Issuance Under Equity Compensation Plans

Information about securities authorized for issuance under our equity compensation plan is incorporated herein by reference to Item 12 of Part III of this Annual Report on Form 10-K.

ITEM 6. SELECTED FINANCIAL DATA.

Not Applicable.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed in "Risk Factors" and in other parts of this Annual Report on Form 10-K.

Company Overview

We are a biopharmaceutical company focused on the development and commercialization of innovative cardiovascular medicines. Our lead product candidate, etripamil, is a novel and potent calcium channel blocker that we designed as a rapid-onset nasal spray to be self-administered by patients. We are developing etripamil for the treatment of specific arrhythmias with a lead indication to treat paroxysmal supraventricular tachycardia, or PSVT, and an indication to treat atrial fibrillation with rapid ventricular rate, or AFib-RVR.

On October 23, 2023, we submitted the New Drug Application, or NDA, to the U.S. Food and Drug Administration, or FDA, seeking approval to sell and market etripamil for the treatment of paroxysmal supraventricular tachycardia, or PSVT. PSVT is a condition characterized by an abnormality in the electrical system of the heart causing patients to have unexpected, often severely symptomatic episodes of rapid heart rate. Patients experiencing episodes of supraventricular tachycardia, or SVT, often experience symptoms including palpitations, sweating, chest pressure or pain, shortness of breath, sudden onset of fatigue, lightheadedness or dizziness, fainting and anxiety. Calcium channel blockers have long been approved for the treatment of PSVT as well as other cardiac conditions. Calcium channel blockers available in oral form are sometimes used prophylactically to attempt to control the frequency and duration of future episodes of SVT. For treatment of episodes of SVT, approved calcium channel blockers are administered intravenously under medical supervision, usually in the emergency department. We believe the combination of convenient nasal-spray delivery and rapid-onset of etripamil has the potential to shift the current treatment paradigm for episodes of SVT away from the burdensome and costly emergency department setting.

We announced that we received a refuse-to-file, or RTF, letter from the FDA on December 26, 2023. Upon preliminary review, the FDA determined that the NDA was not sufficiently complete to permit substantive review. The FDA requested clarification about the data recorded for the time of adverse events in Phase 3 clinical trials; FDA did not express concerns about the nature or severity of adverse events. In February 2024, Milestone held a Type A Meeting with the FDA to determine next steps for the filing for marketing approval. The Agency indicated that the adverse events, or AEs, hourly timing data in question had minimal impact on the overall characterization of the etripamil safety profile. As a result, data sets that capture timing of AEs reported in the Phase 3 pivotal studies will be revised to align with FDA requests and resubmitted. This approach will address the requests from the FDA in their December 2023 RTF letter. The original NDA submission will be reviewed, and no additional clinical efficacy or safety trials have been requested. The Company expects a standard NDA review following the resubmission. The resubmission is planned for the second quarter of 2024. If approved, we believe that etripamil will be the first self-administered therapy for the rapid termination of episodes of SVT wherever and whenever they occur.

On October 17, 2022, we announced positive and statistically significant topline efficacy and safety data from our Phase 3 RAPID clinical trial evaluating etripamil in patients with PSVT. These results from the RAPID trial were presented on November 7, 2022, as a Late-Breaking Clinical Trial at the American Heart Association Scientific Sessions (Chicago, IL). These results were also published in the *Lancet* on July 8, 2023. RAPID, our multi-center, randomized, double-blind, placebo-controlled, event-driven Phase 3 trial, enrolled 706 patients across clinical sites in North America and Europe. Patients were randomized 1:1 using a self-administered regimen consisting of a first dose of study drug, and a repeat dose 10 minutes later if symptoms persisted. Self-administration was prompted by a patient's symptoms and performed in the at-home setting without medical supervision. The RAPID trial achieved its primary endpoint with etripamil demonstrating a highly statistically significant and clinically meaningful difference in time to SVT conversion as compared to placebo. A Kaplan Meier analysis demonstrated a significantly greater proportion of patients who took etripamil converted to sinus

rhythm within thirty minutes compared to patients that took placebo (64.3% vs. 31.2%; hazard ratio, or HR, 2.62; 95% CI 1.66, 4.15; $p < 0.001$). By 90 minutes post-study drug administration, 80.6% of patients taking etripamil converted to sinus rhythm compared to 60.7% of patients taking placebo (HR = 1.93; 95% CI 1.349, 2.752; $p < 0.001$). Statistically significant reductions in time to conversion in patients who took etripamil were evident early and persisted throughout the observation window of the trial compared to patients that took placebo. The median time-to-conversion for patients in the RAPID trial who self-administered etripamil was 17.2 minutes compared to 53.3 minutes for patients taking placebo. The safety and tolerability data from the RAPID trial supports the potential self-administration of etripamil, with findings consistent with those observed in prior trials. The most common randomized-treatment emergent adverse events, or RTEAEs, and adverse events, or AEs, occurred within 24 hours of etripamil administration and were related to the nasal local administration site. Overall, the majority of RTEAEs were reported as mild (68%) or moderate (31%). No serious adverse effects related to etripamil were reported.

The use of additional medical interventions and emergency department utilization were key secondary endpoints for both the RAPID and NODE-301 trials. In a pre-planned pooled analysis across both trials, patients who self-administered etripamil sought additional medical interventions 43% less frequently (15% vs. 25%; $p = 0.013$) and had 39% fewer visits to the emergency department (14% vs. 22%; $p = 0.035$) than patients in the placebo arm.

We believe that PSVT is a large and under-recognized market that we estimate affects approximately two million Americans and results in over 150,000 emergency department visits and hospital admissions and up to 80,000 ablations per year. From this diagnosed population, we define the target addressable market for etripamil as 40 to 60% of patients who experience frequent and longer, moderate to severe episodes each year. After being exposed to the data from the RAPID clinical study in market research, Cardiologists reported a willingness to prescribe etripamil to approximately 50% of the patients with PSVT in their care, which suggests 500,000 to 800,000 patients can potentially be treated with etripamil in the peak year. Additionally, we believe that these target patients will use etripamil to treat a median of five episodes per year based on the projected number of longer or more intense episodes (self-reported) experienced by the patient. This implies demand in the US for etripamil of 2.5 million to 4 million episodes treated in the peak year.

AFib RVR Phase 2 Trial

In mid-2023, we held a pre-IND meeting with FDA and received guidance indicating that we could follow a supplemental NDA, or sNDA, regulatory pathway for the marketing approval for etripamil for the indication of AFib-RVR. The sNDA pathway potentially permits a single pivotal efficacy study to be sufficient for filing for marketing approval if etripamil is already approved for PSVT. In the first quarter of 2024, we met with the FDA in a Type A meeting. In this meeting FDA reiterated its prior guidance regarding the availability of an sNDA pathway. FDA further concurred with respect to key study elements including powering, inclusion criteria, patient population, and statistical analyses, and offered clarification with respect to the endpoints to guide the design of the Phase 3 study. We anticipate progressing to an End of Phase 2 meeting in mid-2024 as an important step to finalize the registrational study protocol.

On November 11, 2023, we presented positive Phase 2 data from the ReVeRA study, as a Featured Science Presentation at the American Heart Association Scientific Meetings (Philadelphia, PA) and as simultaneously published in *Circulation: Arrhythmia and Electrophysiology*. The data reflected that patients with AFib-RVR receiving etripamil nasal spray experienced rapid and statistically superior ventricular rate reduction and improved symptom-relief compared to placebo. In summary, the data demonstrated that etripamil NS was effective in patients with AF-RVR in substantially reducing VR (difference between etripamil vs. placebo in maximum reduction from baseline: -29.91 bpm; $p < 0.0001$). The median time to maximum reduction in VR was 13 min, and the duration of effect (reduction in VR from baseline) was at least 150 min. The median duration of maintaining a VR < 100 bpm was 45.5 min in the first 60 min following drug in the etripamil arm. Etripamil treatment was associated with significant improvement in symptom relief and in treatment satisfaction as measured by the TSQM-9 patient-reported outcome instrument. Safety and tolerability reported in the 56-patient safety population who received etripamil was generally consistent with that observed in our PSVT program. The majority of common AEs were localized to the drug-administration site, and there was a low incidence of serious adverse events.

The randomized, placebo controlled Phase 2 ReVeRA trial enrolled 87 patients and dosed 56 patients aged 18 years and older with AFib who experienced a ventricular rate of 110 or more beats per minute (bpm) prior to receiving etripamil

nasal spray. The trial was designed to assess the reduction in ventricular rate (primary endpoint), the time to achieve maximum reduction in ventricular rate, duration of effect, and patient satisfaction with treatment using the Treatment Satisfaction Questionnaire 9 (TSQM-9) patient reported outcome (PRO) tool (key secondary endpoints).

Data from ReVeRA trial showed that delivery of etripamil nasal spray significantly and rapidly reduced ventricular rate, consistent with the drug's pharmacologic profile. Etripamil achieved the primary endpoint with high statistical significance with patients experiencing a ventricular rate reduction of 29.91 bpm (95% confidence interval: -40.31, -19.52; $p < 0.0001$) in the etripamil arm compared to placebo. The maximum reduction in rate reported by a patient taking etripamil was 34.97 bpm. The median time to maximum reduction in ventricular rate was 13 minutes in patients taking etripamil.

A greater number of patients taking etripamil achieved a ventricular rate of less than 100 bpm (58.3%) than those taking placebo (4%). Furthermore, 67% of patients taking etripamil achieved ventricular rate reductions of more than 20% and 96% of patients receiving etripamil achieved more than 10% in ventricular rate reductions in the first 60 minutes compared to 0% and 20% in patients taking placebo, respectively. Using the TSQM-9, compared to placebo, patients treated with etripamil demonstrated significant improvements in two satisfaction ratings: effectiveness ($p < 0.0001$) and relief of symptoms ($p = 0.0002$).

Treatment-emergent serious adverse events, or TESAEs, were rare, with two occurring in one patient in the etripamil arm (3.7%) and four occurring in two patients in the placebo arm (6.9%). The TESAEs in the etripamil arm (transient severe bradycardia and syncope, assessed as due to hyper-vagotonia occurred in a patient with a history of vagal events, and fully resolved by placing the patient supine and was without sequelae. The most common ($\geq 5\%$) adverse events were mild or moderate in intensity and included nasal discomfort, rhinorrhea, increased lacrimation, throat irritation and dizziness.

An estimated five million Americans suffer from AFib. The Centers for Disease Control projects the prevalence of AFib will grow to an estimated 10 million patients by 2030. A subset of AFib patients experience episodes of abnormally high heart rate most often accompanied by palpitations, shortness of breath, dizziness, and weakness. While these episodes, known as AFib-RVR, may be treated by oral calcium channel blockers and/or beta blockers, patients frequently seek acute care in the emergency department to resolve symptoms. In 2016, nearly 800,000 patients were admitted to the emergency department due to AFib symptoms. Treatment for such symptoms typically includes medically supervised intravenous administration of calcium channel blockers or beta blockers, or electrical cardioversion.

Planned Clinical Development for AFib-RVR

In mid-2023, we met with the FDA for a pre-IND meeting. In this meeting, we received guidance from the FDA on a potential development path for etripamil in AFib-RVR. The FDA agreed that to gain a labelled indication via supplemental NDA, or sNDA, a Phase 3, randomized, placebo controlled, double blind clinical trial using a dosing regimen with self-administration of etripamil in an at-home setting could be acceptable with the support of the already existing safety database from our PSVT trials. The primary endpoint can be the reduction of ventricular rate, and the primary analysis would be on the intent to treat, or ITT, population. In addition, the study would have to show statistical significance ($p < 0.05$) on the key secondary endpoint of symptom relief as a patient benefit, also in the ITT population. The secondary endpoint could use a patient-reported outcomes measure, or PRO, and the application of a seven-point anchored scale was discussed with the FDA. In the first quarter of 2024, we met with the FDA in a Type A meeting. In this meeting we confirmed prior FDA guidance on a single-study supplemental New Drug Application (sNDA) pathway. We further confirmed key study elements including powering, inclusion criteria, patient population, and statistical analyses, and we clarified the endpoints which will guide the design of the Phase 3 study. We anticipate progressing to an End of Phase 2 meeting in mid-2024, an important step to finalize the registrational study protocol.

We plan to propose to the FDA a Phase 3 clinical study for AFib-RVR conducted in the at-home setting consisting of patients with a history of symptomatic episodes and using a repeat-dose regimen of 70mg per dose similar to what was studied in the RAPID trial in patients with PSVT. Our target population would be patients with verified AFib-RVR, and the ITT population would be all patients self-administering the study drug for perceived AFib-RVR. The primary endpoint being considered is the mean change from baseline ventricular rate to nadir ventricular rate for patients treated with etripamil vs placebo, as was studied in the ReVeRA trial. Our key secondary endpoint would be based on a PRO acceptable to the FDA and the same or similar to ones we have used in our PSVT and AFib-RVR programs. We estimate that the study size would be approximately 150 to 200 unique patients treating an episode. This study may begin in 2024 and have an approximate two-year duration to report top-line data.

Operations Overview

Since the commencement of our operations in 2003, we have devoted substantially all of our resources to performing research and development activities in support of our product development efforts, hiring personnel, raising capital to support and expand such activities, providing general and administrative support for these operations and, more recently preparing for commercialization. We operate our business using a significant outsourcing model. As such, our team is composed of a relatively smaller core of employees who direct a significantly larger number of team members who are outsourced in the forms of vendors and consultants to enable execution of our operational plans. We do not currently have any products approved for sale, and we continue to incur significant research and development and general administrative expenses related to our operations.

Since inception, we have incurred significant operating losses. For the years ended December 31, 2023 and 2022, we recorded net losses of \$59.7 million and \$58.4 million, respectively. As of December 31, 2023, we had an accumulated deficit of \$326.0 million. We expect to continue to incur significant losses for the foreseeable future. We anticipate that a substantial portion of our capital resources and efforts in the foreseeable future will be focused on completing the necessary development activities required for obtaining regulatory approval and preparing for potential commercialization of our product candidates. We had \$13.8 million of cash and cash equivalents and \$52.2 million of short-term investments at December 31, 2023.

We expect to continue to incur significant expenses and increasing operating losses for at least the next several years. Our net losses may fluctuate significantly from period to period, depending on the timing of our planned clinical trials and expenditures on other research and development activities. We expect our expenses will increase over time as we:

- continue our ongoing and planned development of etripamil, including and potentially future Phase 4 clinical trials for the treatment of PSVT and future Phase 3 clinical trials for the treatment of AFib-RVR;
- seek marketing approvals for etripamil for the treatment of PSVT, AFib-RVR and other cardiovascular indications;
- establish a sales, marketing, manufacturing and distribution capability, either directly or indirectly through third parties, to commercialize etripamil or any future product candidate for which we may obtain marketing approval;
- build a portfolio of product candidates through development, or the acquisition or in-license of drugs, product candidates or technologies;
- initiate preclinical studies and clinical trials for etripamil for any additional indications we may pursue, including the clinical trials for the treatment of atrial fibrillation and rapid ventricular rate as well as other areas of unmet medical need, and for any additional product candidates that we may pursue in the future;
- maintain, protect and expand our intellectual property portfolio;

- hire additional clinical, regulatory and scientific personnel;
- add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts; and
- incur additional legal, accounting, insurance and other expenses associated with operating as a public company.

Recent Developments

New Drug Application Status

In October 2023 we submitted a New Drug Application, or NDA, for marketing approval in the United States for etripamil for the treatment of PSVT. On December 26, 2023, we announced that we received an RTF letter from the FDA. Upon preliminary review, the FDA determined that the NDA was not sufficiently complete to permit substantive review. The FDA requested clarification about the time of data recorded for adverse events in our Phase 3 clinical trials; FDA did not express concerns about the nature or severity of AEs.

In February 2024, we held a Type A Meeting with the FDA to determine next steps for the filing for marketing approval. The FDA indicated that the timing of AEs in question had minimal impact on the overall characterization of the etripamil safety profile, based on the FDA's review of the affected data which was mainly related to AEs associated with local drug administration site tolerability and, importantly, did not appear to affect the assessment of serious adverse events and/or AEs of special interest for a calcium channel blocker. To align with the FDA's guidance in preliminary response to our questions presented to the FDA in our Type A Meeting request, we plan to restructure the data sets that capture timing of reported AEs, reformat certain data files to facilitate FDA's analyses, and resubmit the NDA. Based on the guidance received during the Type A Meeting, we expect that this approach will address the RTF from the FDA. The FDA has not requested that we complete additional clinical efficacy or safety trials prior to resubmitting the NDA. We expect a standard NDA review period following resubmission of the NDA for etripamil for PSVT. The resubmission is planned for the second quarter of 2024.

In connection with the revised timeline for NDA submission, we have undertaken certain cash conservation measures to reduce spend through program deferrals and team restructuring and expect that our existing cash resources will fund operations into 2026, including through the expected Prescription Drug User Fee Act date for the NDA resubmission. We expect the implementation of these cash conservation measures to be substantially completed in the first quarter of 2024. If FDA approval is granted, we expect to receive a \$75 million payment under an existing royalty agreement, which is intended to fund the potential commercial launch of etripamil for PSVT.

Strategic Financing Transaction

On February 28, 2024, we entered into an underwriting agreement, or the Underwriting Agreement, related to an underwritten public offering, or the Offering, of 16,666,667 of our common shares, without par value, at a public offering price of \$1.50 per share and, in lieu of common shares to certain investors, pre-funded warrants to purchase 3,333,333 Shares at a public offering price of \$1.499 per pre-funded warrant. Under the terms of the Underwriting Agreement, we granted the Underwriters an option to purchase up to an additional 3,000,000 common shares at the same price per share as the other common shares sold in the Offering, which was exercised by the Underwriters in full on February 29, 2024.

Each pre-funded warrant has an exercise price of \$0.001 per share. The pre-funded warrants were exercisable immediately upon issuance, subject to certain beneficial ownership limitations.

The net proceeds to the Company from the Offering, including the proceeds from the exercise by the Underwriters of their option to purchase the additional 3,000,000 common shares in full, was approximately \$32.4 million after deducting underwriting commissions and offering expenses payable by the Company.

The Offering closed on March 4, 2024.

The Macroeconomic Climate

The recent trends towards rising inflation may also materially adversely affect our business and corresponding financial position and cash flows. Inflationary factors, interest rates and overhead costs may adversely affect our operating results. Rising interest and inflation rates also present a recent challenge impacting the U.S. economy and could make it more difficult for us to obtain traditional financing on acceptable terms, if at all, in the future, the Russia-Ukraine war, unrest and/or further escalation in Israel and Gaza, recent banking instabilities and other U.S. geopolitical issues affecting other territories and employee availability and wage increases, and economic markets all of which may result in additional stress on our working capital resources.

Components of Results of Operations

Revenues

We have not generated any revenues from product sales to date and we do not expect to generate revenues from product sales in the near future. Our revenues of \$1.0 million for the year ended December 31, 2023 compared to \$5.0 million for the year ended December 31, 2022 are from the license agreement with Ji Xing and are comprised of upfront and milestone payments. For additional information about our Revenue, see “Note 2 Summary of Significant Accounting Policies, and Note 3 Revenue.”

Research and Development Expenses

Research and development expenses consist primarily of salaries and fees paid to external service providers and also include personnel costs, including share-based compensation expense and other related compensation expenses. We expense research and development costs in the periods in which they are incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors, collaborators and third-party service providers.

To date, substantially all of our research and development expenses have been related to the preclinical and clinical development of etripamil. As we advance etripamil or other product candidates for other indications, we expect to allocate our direct external research and development costs across each of the indications or product candidates. Further, we expect our research and development costs to increase for the development of etripamil in atrial fibrillation with rapid ventricular rate, and we expect our research and development expenses related to the development of etripamil for PSVT decrease as a percentage of our total research and development expenses.

The process of conducting the necessary clinical research to obtain regulatory approval is costly and time-consuming and is subject to uncertainties and delays. As a result of the uncertainties discussed above, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of our product candidates, if at all.

We recognize the benefit of Canadian research and development tax credits as a reduction of research and development costs for fully refundable investment tax credits. General and administrative expenses include personnel and related compensation costs, expenses for outside professional services, lease expense, insurance expense and other general administrative expenses. Personnel costs consist of salaries, bonuses, benefits, related payroll taxes and share-based compensation. Outside professional services consist of legal, accounting and audit services and other consulting fees.

We expect to continue to incur expenses as a public company, including expenses related to compliance with the rules and regulations of the Securities and Exchange Commission, or SEC, and those of any national securities exchange on which our securities are traded, additional insurance expenses, investor relations activities, and other administrative and professional services.

Commercial Expenses

Commercial expenses consist primarily of personnel and related compensation costs, market and health economic research, and market development activities for PSVT and, to a lesser extent, AFib-RVR. The focus of these expenses is three-fold: first, we want to leverage rigorous primary and secondary research to fully understand our target disease states from the perspective of the patient, healthcare provider, and payer; second, we want to understand and document the burden of disease posed by PSVT and AFib-RVR from an epidemiology, healthcare resource use, and cost perspective; and third, we want to engage our target patient, physician, and payer stakeholders with evidence-based and compliant educational materials that serve to increase the awareness and understanding of the impact of PSVT and AFib-RVR on patients and the overall healthcare system.

If the FDA approves the NDA, we anticipate our commercial expenses will increase as we invest in the infrastructure, personnel, and operational expenses required to launch our first product in the United States.

Interest Income

Interest income primarily consists of interest income from our cash equivalents and short-term investments.

Interest Expense

Interest expense primarily consists of contractual debt interest expense and the amortization of debt costs.

Results of Operations

Comparison of the Years Ended December 31, 2023 and 2022

(in thousands)	Year ended December 31,			
	2023	2022	\$ Change	% Change
Revenue	\$ 1,000	\$ 5,000	\$ (4,000)	100.0%
Operating expenses				
Research and development, net of tax credits	31,052	39,829	(8,777)	(22.0)%
General and administrative	15,932	15,718	214	1.4%
Commercial	15,114	9,095	6,019	66.2%
Total operating expenses	62,098	64,642	(2,544)	(3.9)%
Loss from operations	(61,098)	(59,642)	(1,456)	2.4%
Interest income	3,967	1,254	2,713	216.4%
Interest expense	(2,554)	—	(2,554)	100.0%
Net loss	(59,685)	(58,388)	(1,297)	2.2%

Revenue

We recorded revenue of \$1.0 million for the year ended December 31, 2023. This revenue was the result of having reached a milestone pursuant to our License and Collaboration Agreement, dated May 15, 2021, with Ji Xing Pharmaceuticals Limited, such party being referred to as Ji Xing and such agreement as the Ji Xing License Agreement, due upon the successful initiation of a Phase 1 Clinical Trial of a pharmaceutical product that uses a device to deliver etripamil by nasal spray by or on behalf of Ji Xing for the treatment of PSVT in the People's Republic of China, or the Territory, including mainland China, Hong Kong Special Administrative Region, Macau Special Administrative Region and Taiwan.

We recorded revenue of \$5.0 million for the year ended December 31, 2022. This revenue was related to two milestones reached as a result of the first patient dosed in a Phase 3 Clinical Trial for the treatment of PSVT in the Territory pursuant

to the Ji Xing License Agreement and the successful completion of a Phase 3 clinical trial for the treatment of PSVT in the United States.

Research and Development Expenses

The following table shows our research and development expenses by type of activity for the periods indicated.

(in thousands)	Year ended December 31,			
	2023	2022	\$ Change	% Change
Clinical	\$ 19,611	\$ 35,264	\$ (15,653)	(44.4)%
Drug manufacturing and formulation	6,741	3,607	3,134	86.9%
Regulatory and other costs	5,012	1,414	3,598	254.5%
Less: R&D tax credits	(312)	(456)	144	(31.6)%
Total R&D expenses	\$ 31,052	\$ 39,829	\$ (8,777)	(22.0)%

Research and development expenses decreased by \$8.8 million, or 22.0% for the year ended December 31, 2023 compared to the year ended December 31, 2022. The decrease was primarily due to lower clinical expenses. This decrease in clinical expenses was driven by lower clinical development costs and clinical personnel-related costs as a result of the completion of phase 3 studies. The decrease in clinical costs was partially offset by an increase in drug manufacturing consulting costs, drug manufacturing personnel costs and regulatory consulting costs.

General and Administrative

General and administrative expenses remained consistent for the year ended December 31, 2023 compared to the year ended December 31, 2022.

Commercial

Commercial expenses increased by \$6.0 million, or 66.2%, for the year ended December 31, 2023, compared to the same period in 2022. This increase is a result of additional personnel and professional costs required to expand capabilities and operations in anticipation of potential commercialization.

Interest Income

Interest income was \$4.0 million and \$1.3 million for the year ended December 31, 2023 and 2022, respectively. The increase in interest income was due to higher interest rates earned on investments in 2023 when compared to 2022.

Interest Expense

Interest expense was \$2.6 million for the year ended December 31, 2023 compared to no interest expense for the year ended December 31, 2022. The increase in interest expense was due to the issuance of the 2029 Convertible Notes in the first quarter of 2023.

Liquidity and Capital Resources

Sources of Liquidity

We have incurred operating losses and experienced negative operating cash flows since our inception, and we anticipate continuing to incur losses for at least the next several years. As of December 31, 2023, we had cash, cash equivalents and short-term investments of \$66.0 million and an accumulated deficit of \$326.0 million.

On February 28, 2024, we entered into an underwriting agreement, or the Underwriting Agreement, related to an underwritten public offering, or the Offering, of 16,666,667 of our common shares, without par value, at a public offering

price of \$1.50 per share and, in lieu of common shares to certain investors, pre-funded warrants to purchase 3,333,333 Shares at a public offering price of \$1.499 per pre-funded warrant. Under the terms of the Underwriting Agreement, we granted the Underwriters an option to purchase up to an additional 3,000,000 common shares at the same price per share as the other common shares sold in the Offering, which was exercised by the Underwriters in full on February 29, 2024.

Each pre-funded warrant has an exercise price of \$0.001 per share. The pre-funded warrants were exercisable immediately upon issuance, subject to certain beneficial ownership limitations.

The net proceeds to the Company from the Offering, including the proceeds from the exercise by the Underwriters of their option to purchase the additional 3,000,000 common shares in full, was approximately \$32.4 million after deducting underwriting commissions and offering expenses payable by the Company.

On March 27, 2023, we entered into a purchase and sale agreement, or the Royalty Purchase Agreement, and a note purchase agreement, or the Note Purchase Agreement, with RTW Investments, LP and certain of its affiliates, or collectively, RTW.

On March 29, 2023, the Company closed the transaction contemplated by the Note Purchase Agreement and issued and sold the \$50 million principal amount of 6.0% Convertible Senior Notes due 2029, or the 2029 Convertible Notes, to the holders in a private placement transaction.

The 2029 Convertible Notes are senior secured obligations and are guaranteed on a senior secured basis by our wholly owned subsidiary, Milestone Pharmaceuticals USA, Inc. Interest, at the annual rate of 6.0%, is payable quarterly in cash or, at our option, payable in kind for the first three years. The maturity date for the 2029 Convertible Notes will be March 31, 2029. The obligations under the 2029 Convertible Notes are secured by substantially all of our and our subsidiary guarantor's assets.

Each \$1,000 of principal of the 2029 Convertible Notes (including any interest added thereto as payment in kind) is convertible into 191.0548 shares of our common shares, equivalent to an initial conversion price of approximately \$5.23 per share, subject to customary anti-dilution and other adjustments. Subject to specified conditions, on or after March 27, 2027, the 2029 Convertible Notes are redeemable by us subject to certain conditions, at a redemption price equal to 100% of the principal amount of the 2029 Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

On July 29, 2020, we entered into an Open Market Sale AgreementSM, or the Sales Agreement, with respect to an at-the-market offering program, or the ATM Program, under which the Company may issue and sell its common shares having an aggregate offering price of up to \$50 million through Jefferies as its sales agent or principal. The common shares to be sold under the Sales Agreement, are offered and sold pursuant to our shelf registration statement on Form S-3 (File No. 333-239318), which was declared effective by the SEC on July 6, 2020. During the year ended December 31, 2022, we issued 361,236 shares under the Sales Agreement, resulting in net proceeds of \$2.6 million (net of issuance costs of \$0.1 million).

We expect that our operating plan, existing cash and cash equivalents and short-term investments to be sufficient to fund our operations for at least the next 12 months from the date of issuance of this Annual Report on Form 10-K for the year ending December 31, 2023 and that there are no events or conditions that may cast substantial doubt on our ability to continue as a going concern for at least the next 12 months from the date of this filing.

Contingent future source of funding

Pursuant to the Royalty Purchase Agreement, RTW agreed to purchase, following U.S. Food and Drug Administration (FDA) approval of etripamil (subject to certain conditions), in exchange for a purchase price of \$75.0 million, the right to receive a tiered quarterly royalty payments, or "royalty interest", on the annual net product sales of etripamil in the United States. This represents a contingent future source of funding, in order for the Company to receive the \$75 million, the closing conditions specified in the Royalty Purchase Agreement, which includes the Company receiving marketing approval from the FDA on or prior to September 30, 2025, must be met.

Funding Requirements

We use our cash primarily to fund research and development expenditures. We expect our research and development expenses to increase as we continue the development of etripamil and prepare to pursue regulatory approval. We expect to incur increasing operating losses for the foreseeable future as we continue the clinical development of our product candidate. At this time, due to the inherently unpredictable nature of clinical development, we cannot reasonably estimate the costs we will incur and the timelines that will be required to complete development, obtain marketing approval, and commercialize etripamil or any future product candidates, if at all. For the same reasons, we are also unable to predict when, if ever, we will generate revenue from product sales or whether, or when, if ever, we may achieve profitability. Clinical and preclinical development timelines, the probability of success, and development costs can differ materially from expectations.

In addition, we have exclusive development and commercialization rights for etripamil for all indications that we may pursue and as such have the potential to license development and or commercialization rights for etripamil to a potential partner in regions outside of Greater China. We plan to establish commercialization and marketing capabilities using a direct sales force to commercialize etripamil in the United States. Outside of the United States, we are considering commercialization strategies that may include collaborations with other companies.

For other new product candidates, our efforts are focused on licensing development and/or commercialization rights from potential partners. In the case of either in-licensing or out-licensing, we cannot forecast when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development and commercialization plans and capital requirements.

The timing and amount of our operating expenditures will depend largely on:

- the timing, progress and results of our ongoing and planned clinical trials and other development activities of etripamil in PSVT, AFib-RVR and in other cardiovascular indications;
- the scope, progress, results and costs of preclinical development, laboratory testing and clinical trials of etripamil for additional indications or any future product candidates that we may pursue;
- our ability to establish additional collaborations on favorable terms, if at all;
- the ability of vendors and third-party service providers to accurately forecast expenses and deliver on expectations;
- the costs, timing and outcome of regulatory review of etripamil and any future product candidates;
- the costs and timing of future commercialization activities, including product manufacturing, marketing, sales and distribution, for etripamil and any future product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of etripamil and any future product candidates for which we receive marketing approval;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims; and
- the extent to which we acquire or in-license other product candidates and technologies.

Until such time, if ever, as we can generate substantial revenue from product sales, we expect to fund our operations and capital funding needs through equity and/or debt financing. We may also consider entering into collaboration arrangements or selectively partnering for clinical development and commercialization. The sale of additional equity would result in

additional dilution to our shareholders. The incurrence of debt financing would result in debt service obligations and the instruments governing such debt could provide for operating and financing covenants that restrict our operations or our ability to incur additional indebtedness or pay dividends, among other items. If we are not able to secure adequate additional funding, we may be forced to make reductions in spending, extend payment terms with suppliers, liquidate assets where possible, and/or suspend or curtail planned programs. Any of these actions could materially and adversely affect our business, financial condition and results of operations.

Cash Flows

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

(in thousands)	Year ended December 31,			
	2023	2022	\$ Change	% Change
Net cash (used in) provided by:				
Operating activities	\$ (46,424)	\$ (52,469)	6,045	(11.5)%
Investing activities	4,756	(57,124)	61,880	(108.3)%
Financing activities	47,792	3,088	44,704	1447.7%
Net increase (decrease) in cash and cash equivalents during the period	\$ 6,124	\$ (106,505)	112,629	

Operating Activities

Net cash used in operating activities during the year ended December 31, 2023 was \$46.4 million, which consisted primarily of a net loss of \$59.7 million. The net loss was partially offset by a net cash increase of \$1.2 million related to the change in assets and liabilities, non-cash charges of \$9.5 million related to share based compensation and non-cash interest charges of \$2.3 million related to the convertible note.

Net cash used in operating activities during the year ended December 31, 2022 was \$52.5 million, which consisted of a net loss of \$58.4 million and a net cash decrease of \$3.3 million in our operating assets and liabilities, in addition to non-cash charges of \$9.2 million primarily related to share-based compensation.

Investing Activities

During the year ended December 31, 2023, we redeemed \$142.0 million of short-term investments and we acquired \$137.1 million of short-term investments, in addition we acquired \$0.1 million in property and equipment. These short-term investment acquisitions resulted in a growth of \$4.8 million in short term investments for the year ended December 31, 2023. In the year ended December 31, 2022, we redeemed \$29.0 million of short-term investments and we acquired \$85.9 million of short-term investments, in addition we acquired \$0.3 million in property and equipment. These short-term investment acquisitions resulted in a growth of \$56.9 million in short term investments for the year ended December 31, 2022.

Financing Activities

In the year ended December 31, 2023, our financing activities provided cash proceeds of \$47.8 million. These proceeds were primarily a result of the \$50 million received from the issuance of convertible notes under the Note Purchase Agreement, which was partially offset by \$2.8 million in debt costs, and \$0.6 million in cash proceeds from the exercise of share options and issuance of common shares under the employee stock purchase plan. In the year ended December 31, 2022, our financing activities provided cash of \$3.1 million from the issuance of common shares under the Sales Agreement for proceeds of \$2.6 million (net of issuance costs of \$0.1 million) and a de minimis amount of proceeds from the exercise of share options and warrants.

Contractual Obligations

We enter into contracts in the normal course of business with clinical research organizations, or CROs, contract manufacturing organizations, or CMOs, and other third parties for clinical trials, preclinical research studies and testing

and manufacturing services. These contracts are generally cancelable at our option with various notice requirements as defined in the contract. Payments due upon cancellation consist of payments for services provided or expenses incurred, including noncancelable obligations of our service providers, up to and through the date of cancellation. These payments are not included as the amount and timing of these payments are not known.

Critical Accounting Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements as at December 31, 2023, which have been prepared in accordance with United States generally accepted accounting principles, or U.S. GAAP and on a basis consistent with those accounting principles followed by us. The preparation of these consolidated financial statements requires our management to make judgments and estimates that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenue generated and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Significant estimates and judgments include, but are not limited to:

- Estimates of the percentage of work completed of the total work over the life of the individual trial in accordance with agreements established with CROs, CMOs and clinical trial sites which in turn impact the research & development expenses.
- Estimate of the grant date fair value share options granted to employees, consultants and direct, and the resulting share-based compensation expense, using the Black Scholes option pricing model.

Accordingly, actual results may differ from these judgments and estimates under different assumptions or conditions and any such differences may be material. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

a) Research & Development Expenses — Accruals

Research and development costs are charged against income in the period of expenditure. Our research and development costs consist primarily of salaries and fees paid to CROs and to CMO.

Clinical trial expenses include direct costs associated with CROs, direct CMO costs for the formulation and packaging of clinical trial material, as well as investigator and patient-related costs at sites at which our trials are being conducted. Direct costs associated with our CROs and CMOs are generally payable on a time-and-materials basis, or when milestones are achieved. The invoicing from clinical trial sites can lag several months. We record expenses for our clinical trial activities performed by third parties based upon estimates of the percentage of work completed of the total work over the life of the individual trial in accordance with agreements established with CROs and clinical trial sites. We determine the estimates through discussions with internal clinical personnel, CROs and CMOs as to the progress or stage of completion of trials or services and the agreed-upon fee to be paid for such services based on facts and circumstances known to us as of each consolidated balance sheet date. The actual costs and timing of clinical trials are highly uncertain, subject to risks and may change depending upon a number of factors, including our clinical development plan. If the actual timing of the performance of services of the level of effort varies from the estimate, we will adjust the accrual accordingly. Adjustments to prior period estimates have not been material. We recognize the benefit of Canadian research and development tax credits as a reduction of research and development costs for fully refundable investment tax credits and as a reduction of income taxes for investment tax credits that can only be claimed against income taxes payable when there is reasonable assurance that the claim will be recovered.

b) Share-Based Compensation

We recognize compensation costs related to share options granted to employees, consultants and directors based on the estimated fair value of the awards on the date of grant. We estimate the grant date fair value, and the resulting share-based compensation expense, using the Black Scholes option pricing model. This Black Scholes option pricing model uses various inputs to measure fair value, including estimated fair value of our underlying common shares at the grant date, expected term, estimated volatility, risk-free interest rate and expected dividend yields of our common shares. The estimated volatility creates a critical estimate because we have not been a public company long enough to demonstrate our own historical volatility. The grant date fair value of the share-based awards is recognized on a straight-line basis over the requisite service periods, which are generally the vesting period of the respective awards. Forfeitures are accounted for as they occur.

The following table summarizes, by grant date, the number of underlying common shares and the associated per-share exercise price, which was the fair value per share as determined by our board of directors on the applicable grant date, for share options granted during the years ended December 31, 2023 and 2022:

	Number of Common Shares Subject to Options Granted	Exercise Price Per Common Share	Estimated Fair Value per Common Share at Grant Date	Estimated Per-Share Fair Value of Options
March 21, 2022	1,388,400	\$ 5.46	\$ 5.46	\$ 4.12
April 1, 2022	65,000	\$ 6.85	\$ 6.85	\$ 5.17
April 11, 2022	36,000	\$ 6.93	\$ 6.93	\$ 5.25
May 16, 2022	92,000	\$ 5.48	\$ 5.48	\$ 4.18
July 5, 2022	150,000	\$ 6.07	\$ 6.07	\$ 4.49
July 18, 2022	17,000	\$ 6.45	\$ 6.45	\$ 4.98
August 1, 2022	2,000	\$ 7.30	\$ 7.30	\$ 5.61
August 8, 2022	2,000	\$ 6.76	\$ 6.76	\$ 5.20
August 15, 2022	100,000	\$ 7.10	\$ 7.10	\$ 5.49
August 29, 2022	70,000	\$ 8.20	\$ 8.20	\$ 6.35
September 8, 2022	22,000	\$ 8.53	\$ 8.53	\$ 6.61
November 2, 2022	20,000	\$ 5.03	\$ 5.03	\$ 4.69
November 8, 2022	12,000	\$ 4.22	\$ 4.22	\$ 3.94
January 16, 2023	82,000	\$ 3.93	\$ 3.93	\$ 3.10
February 16, 2023	1,323,900	\$ 3.59	\$ 3.59	\$ 2.87
February 27, 2023	36,000	\$ 3.19	\$ 3.19	\$ 2.54
March 14, 2023	3,500	\$ 3.51	\$ 3.51	\$ 2.79
March 21, 2023	42,000	\$ 3.45	\$ 3.45	\$ 2.75
May 1, 2023	125,000	\$ 3.62	\$ 3.62	\$ 2.88
May 22, 2023	20,000	\$ 4.10	\$ 4.10	\$ 3.27
June 7, 2023	180,000	\$ 3.86	\$ 3.86	\$ 3.01
June 19, 2023	15,000	\$ 3.50	\$ 3.50	\$ 2.80
July 24, 2023	15,000	\$ 3.10	\$ 3.10	\$ 2.48
July 25, 2023	4,000	\$ 3.11	\$ 3.11	\$ 2.49
August 1, 2023	21,000	\$ 3.17	\$ 3.17	\$ 2.54
October 2, 2023	122,000	\$ 2.98	\$ 2.98	\$ 2.30
October 16, 2023	8,000	\$ 2.99	\$ 2.99	\$ 2.31

Recent Accounting Pronouncements

Refer to Note 2, “Summary of Significant Accounting Policies,” in the accompanying notes to our consolidated financial statements for a discussion of recent accounting pronouncements.

Emerging Growth Company Status

The Jumpstart Our Business Startups Act of 2012 permits an “emerging growth company” such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have irrevocably elected to “opt out” of this provision and, as a result, we comply with new or revised accounting standards when they are required to be adopted by public companies that are not emerging growth companies.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risks in the ordinary course of our business. These risks primarily relate to interest rate risks. For the year ended December 31, 2023, we had cash and cash equivalents and short-term investments of \$13.8 million and \$52.2 million, respectively. For the year ended December 31, 2022, we had cash and cash equivalents and short-term investments of \$7.6 million and \$56.9 million, respectively. These cash and cash equivalents and short-term investments consist primarily of bank deposits and guaranteed investment certificates. The primary objective of our investment activities is to preserve principal and liquidity while maximizing income without significantly increasing risk. We do not enter into investments for trading or speculative purposes. Due to the short-term nature of our investment portfolio, we do not believe an immediate 10% increase or decrease in interest rates would have a material effect on the fair market value of our portfolio, and accordingly we do not expect our operating results or cash flows to be materially affected by a sudden change in market interest rates.

We undertake certain transactions in Canadian dollars and as such are subject to risk due to fluctuations in exchange rates. Canadian dollar denominated payables are paid at the converted rate as due. We do not use derivative instruments to hedge exposure to foreign exchange rate risk due to the low volume of transactions denominated in foreign currencies. At December 31, 2023 and 2022, our net monetary exposure denominated in Canadian dollars was \$2.7 million and \$0.1 million, respectively.

Our operating results and financial position are reported in U.S. dollars in our financial statements. The fluctuation of the Canadian dollar in relation to the U.S. dollar might, consequently, have an impact upon our loss and may also affect the value of our assets and the amount of shareholders’ equity. We do not believe that inflation and changing prices had a significant impact on our results of operations for any periods presented herein.

ITEM 8. FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of Milestone Pharmaceuticals Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Milestone Pharmaceuticals Inc. and its subsidiary (together, the Company) as of December 31, 2023 and 2022, and the related consolidated statements of loss, shareholders' equity and cash flows for the years then ended, including the related notes (collectively referred to as the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

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

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

/s/PricewaterhouseCoopers LLP
Montreal, Canada
March 21, 2024

We have served as the Company's auditor since 2016

Milestone Pharmaceuticals Inc.
Consolidated Balance Sheets
(in thousands of US dollars, except share data)

	December 31, 2023	December 31, 2022
Assets		
Current assets		
Cash and cash equivalents	\$ 13,760	\$ 7,636
Short-term investments	52,243	56,949
Research and development tax credits receivable	643	331
Prepaid expenses	3,178	6,005
Other receivables	3,208	882
Total current assets	73,032	71,803
Operating lease right-of-use assets	1,917	2,423
Property and equipment	277	257
Total assets	\$ 75,226	\$ 74,483
Liabilities, and Shareholders' Equity		
Current liabilities		
Accounts payable and accrued liabilities	\$ 6,680	\$ 5,644
Operating lease liabilities	546	495
Total current liabilities	7,226	6,139
Operating lease liabilities, net of current portion	1,457	1,996
Senior secured convertible notes	49,772	—
Total liabilities	58,455	8,135
Shareholders' Equity		
Common shares, no par value, unlimited shares authorized 33,483,111 shares issued and outstanding as of December 31, 2023, 34,286,002 shares issued and outstanding as of December 31, 2022	260,504	273,900
Pre-funded warrants - 9,577,257 issued and outstanding as of December 31, 2023 and 8,518,257 as of December 31, 2022	48,459	34,352
Additional paid-in capital	33,834	24,437
Accumulated deficit	(326,026)	(266,341)
Total shareholders' equity	16,771	66,348
Total liabilities and shareholders' equity	\$ 75,226	\$ 74,483

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

Milestone Pharmaceuticals Inc.
Consolidated Statements of Loss
(in thousands of US dollars, except share and per share data)

	Years Ended December 31,	
	2023	2022
Revenue	\$ 1,000	\$ 5,000
Operating expenses		
Research and development, net of tax credits	\$ 31,052	\$ 39,829
General and administrative	15,932	15,718
Commercial	15,114	9,095
Loss from operations	(61,098)	(59,642)
Interest income	3,967	1,254
Interest expense	(2,554)	—
Net loss and comprehensive loss	<u>\$ (59,685)</u>	<u>\$ (58,388)</u>
Weighted average number of shares and pre-funded warrants outstanding, basic and diluted	<u>42,955,779</u>	<u>42,450,316</u>
Net loss per share, basic and diluted	<u>\$ (1.39)</u>	<u>\$ (1.38)</u>

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

Milestone Pharmaceuticals Inc.
Consolidated Statements of Shareholders' Equity
(in thousands of US dollars, except share data)

	Common Shares		Pre-funded warrants		Additional paid-in capital	Accumulated deficit	Total
	Number of shares	Amount	Number of warrants	Amount			
Balance as of December 31, 2021	29,897,559	\$ 251,901	12,327,780	\$ 52,941	\$ 15,711	\$ (207,953)	\$ 112,600
Transactions during 2022							
Net loss	—	—	—	—	—	(58,388)	(58,388)
Exercise of stock options	217,684	742	—	—	(322)	—	420
Exercise of prefunded warrants, net of issuance costs	3,809,523	18,627	(3,809,523)	(18,589)	—	—	38
Share-based compensation	—	—	—	—	9,048	—	9,048
Issuance of common shares, net of issuance costs	361,236	2,630	—	—	—	—	2,630
Balance as of December 31, 2022	<u>34,286,002</u>	<u>\$ 273,900</u>	<u>8,518,257</u>	<u>\$ 34,352</u>	<u>\$ 24,437</u>	<u>\$ (266,341)</u>	<u>\$ 66,348</u>
Balance as of December 31, 2022	34,286,002	\$ 273,900	8,518,257	\$ 34,352	\$ 24,437	\$ (266,341)	\$ 66,348
Transactions during 2023							
Net loss	—	—	—	—	—	(59,685)	(59,685)
Exercise of stock options	114,103	326	—	—	(137)	—	189
Pre-funded warrants - Private Placement, net of issuance costs	—	—	1,059,000	14,107	—	—	14,107
Share-based compensation	—	—	—	—	9,534	—	9,534
Exchange of common shares	(1,059,000)	(14,115)	—	—	—	—	(14,115)
Employee stock purchase plan purchases	142,006	393	—	—	—	—	393
Balance as of December 31, 2023	<u>33,483,111</u>	<u>\$ 260,504</u>	<u>9,577,257</u>	<u>\$ 48,459</u>	<u>\$ 33,834</u>	<u>\$ (326,026)</u>	<u>\$ 16,771</u>

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

Milestone Pharmaceuticals Inc.
Consolidated Statements of Cash Flows
(in thousands of US dollars)

	Years ended December 31,	
	2023	2022
Cash flows used in operating activities		
Net loss	\$ (59,685)	\$ (58,388)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation of property and equipment	92	89
Amortization of debt costs	244	—
Accretion of investment discount	(162)	(97)
Non-cash interest expense related to debt	2,310	—
Share-based compensation expense	9,534	9,048
Loss on disposals of property and equipment	—	141
Changes in operating assets and liabilities:		
Other receivables	(2,326)	(755)
Research and development tax credits receivable	(312)	25
Prepaid expenses	2,827	(1,706)
Operating lease assets and liabilities	18	81
Accounts payable and accrued liabilities	1,036	(907)
Net cash used in operating activities	<u>(46,424)</u>	<u>(52,469)</u>
Cash provided by (used in) investing activities		
Acquisition of property and equipment	(112)	(272)
Acquisition of short-term investments	(137,132)	(85,852)
Redemption of short-term investments	142,000	29,000
Net cash provided by (used in) investing activities	<u>4,756</u>	<u>(57,124)</u>
Cash provided by financing activities		
Proceeds from exercise of options	189	420
Proceeds from exercise of warrants	—	38
Proceeds from issuance of senior secured convertible debt	50,000	—
Issuance of common shares, net of issuance costs	—	2,630
Pre-funded warrants issuance costs	(8)	—
Proceeds from employee stock purchase plan	393	—
Payment of debt issuance costs	(2,782)	—
Cash provided by financing activities	<u>47,792</u>	<u>3,088</u>
Net increase (decrease) in cash and cash equivalents	6,124	(106,505)
Cash and cash equivalents – Beginning of year	7,636	114,141
Cash and cash equivalents – End of year	\$ 13,760	\$ 7,636

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

Milestone Pharmaceuticals Inc.
Notes to Consolidated Financial Statements
(in thousands of US dollars, except share and per share data)

1 Organization and Nature of Operations

Milestone Pharmaceuticals Inc. (Milestone or the Company) is a biopharmaceutical company incorporated under the Business Corporations Act of Québec. Milestone is focused on the development and commercialization of innovative cardiovascular medicines. Milestone's lead product candidate, etripamil, is a novel, potent short-acting calcium channel blocker that the Company designed and is developing as a rapid-onset nasal spray to be administered by patients. The Company is developing etripamil to treat paroxysmal supraventricular tachycardia, atrial fibrillation, and other cardiovascular indications.

2 Summary of Significant Accounting Policies

a) Basis of consolidation

The consolidated financial statements include the accounts of the Company and Milestone Pharmaceuticals USA, Inc. All intercompany transactions and balances have been eliminated.

b) Basis of Presentation and Use of Accounting Estimates

These consolidated financial statements of the Company have been presented in United States dollars (USD) and have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP), including the applicable rules and regulations of the Securities and Exchange Commission (SEC) regarding financial reporting.

The preparation of consolidated financial statements in conformity with U.S. GAAP requires the Company to make estimates and judgments that affect certain 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 revenue and expenses during the year. The Company bases its estimates and assumptions on current facts, historical experience and various other factors that it believes are reasonable under the circumstances, to determine the carrying values of assets and liabilities that are not readily apparent from other sources. Significant estimates and judgments include, but are not limited to,

- Estimates of the percentage of work completed of the total work over the life of the individual trial in accordance with agreements established with clinical research organizations, or CROs, contract manufacturing organizations, or CMOs, and clinical trial sites which in turn impact the research & development expenses.
- Estimate of the grant date fair value of share options granted to employees, consultants and directors, and the resulting share-based compensation expense, using the Black Scholes option pricing model.

Estimates and assumptions about future events and their effects cannot be determined with certainty and therefore require the exercise of judgment. As of the date of issuance of these consolidated financial statements, the Company is not aware of any specific event or circumstance that would require the Company to update its estimates, assumptions and judgments. These estimates may change as new events occur and additional information is obtained and are recognized in the consolidated financial statements as soon as they become known. Actual results could differ from those estimates and any such differences may be material to the Company's consolidated financial statements.

c) Segment Information

The Company manages its operations as a single operating segment for the purposes of assessing performance and making operating decisions while focusing on the development and commercialization of innovative cardiovascular medicines.

Milestone Pharmaceuticals Inc.
Notes to Consolidated Financial Statements
(in thousands of US dollars, except share and per share data)

d) Revenue Recognition

Collaborative Arrangements

The Company considers the nature and contractual terms of arrangements and assesses whether an arrangement involves a joint operating activity pursuant to which the Company is an active participant and is exposed to significant risks and rewards dependent on the commercial success of the activity. If the Company is an active participant and is exposed to significant risks and rewards dependent on the commercial success of the activity, the Company accounts for such an arrangement as a collaborative arrangement under Accounting Standards Codification (ASC) 808, Collaborative Arrangements (ASC 808), which requires that certain transactions between the Company and collaborators be recorded in its consolidated statements of comprehensive loss on either a gross basis or net basis, depending on the characteristics of the collaborative relationship, and requires enhanced disclosure of collaborative relationships. The Company evaluates its collaboration agreements for proper classification in its consolidated statements of comprehensive loss based on the nature of the underlying activity. If payments to and from collaborative partners are not within the scope of other authoritative accounting literature, the consolidated statements of loss classification for the payments is based on a reasonable, rational analogy to authoritative accounting literature that is applied in a consistent manner. If the Company concludes that it has a customer relationship with one of its collaborators, the Company follows the guidance in Accounting Standards Codification (ASC) Topic 606, Revenue From Contracts With Customers (ASC 606).

Revenue from Contracts with Customers

In accordance with ASC 606, revenue is recognized when a customer obtains control of promised goods or services. The amount of revenue recognized reflects the consideration to which the Company expects to be entitled in exchange for these goods and services. To achieve this core principle, the Company applies the following five steps: 1) identify the customer contract; 2) identify the contract's performance obligations; 3) determine the transaction price; 4) allocate the transaction price to the performance obligations; and 5) recognize revenue when or as a performance obligation is satisfied. The Company evaluates all promised goods and services within a customer contract and determines which of such goods and services are separate performance obligations. This evaluation includes an assessment of whether the good or service is capable of being distinct and whether the good or service is separable from other promises in the contract. In assessing whether promised goods or services in licensing arrangements are distinct, the Company considers factors such as the stage of development of the underlying intellectual property and the capabilities of the customer to develop the intellectual property on their own or whether the required expertise is readily available. Licensing arrangements are analyzed to determine whether the promised goods or services, which often include licenses, research and development services and governance committee services, are distinct or whether they must be accounted for as part of a combined performance obligation. If the license is considered not to be distinct, the license would then be combined with other promised goods or services as a combined performance obligation. If the Company is involved in a governance committee, it assesses whether its involvement constitutes a separate performance obligation. When governance committee services are determined to be separate performance obligations, the Company determines the fair value to be allocated to this promised service. Certain contracts contain optional and additional items, which are considered marketing offers and are accounted for as separate contracts with the customer if such option is elected by the customer, unless the option provides a material right which would not be provided without entering into the contract. An option that is considered a material right is accounted for as a separate performance obligation. The transaction price is determined based on the consideration to which the Company will be entitled in exchange for transferring goods and services to the customer. A contract may contain variable consideration, including potential payments for both milestone and research and development services. For certain potential milestone payments, the Company estimates the amount of variable consideration by using the most likely amount method. In making this assessment, the Company evaluates factors such as the clinical, regulatory, commercial and other risks that must be overcome to achieve the milestone. Each reporting period the Company re-evaluates the probability of achievement of such variable consideration and any related constraints. Milestone will include variable consideration, without constraint, in the transaction price to the extent it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

Milestone Pharmaceuticals Inc.
Notes to Consolidated Financial Statements
(in thousands of US dollars, except share and per share data)

If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price among the performance obligations on a relative standalone selling price basis unless a portion of the transaction price is variable and meets the criteria to be allocated entirely to a performance obligation or to a distinct good or service that forms part of a single performance obligation.

The Company allocates the transaction price based on the estimated standalone selling price of the underlying performance obligations or in the case of certain variable consideration to one or more performance obligations. The Company must develop assumptions that require judgment to determine the stand-alone selling price for each performance obligation identified in the contract. The Company utilizes key assumptions to determine the stand-alone selling price, which may include other comparable transactions, pricing considered in negotiating the transaction and the estimated costs to complete the respective performance obligation. Certain variable consideration is allocated specifically to one or more performance obligations in a contract when the terms of the variable consideration relate to the satisfaction of the performance obligation and the resulting amounts allocated to each performance obligation are consistent with the amount the Company would expect to receive for each performance obligation.

When a performance obligation is satisfied, revenue is recognized for the amount of the transaction price, excluding estimates of variable consideration that are constrained, that is allocated to that performance obligation on a relative standalone selling price basis. Significant management judgment is required in determining the level of effort required under an arrangement and the period over which the Company is expected to complete its performance obligations under an arrangement.

For performance obligations consisting of licenses and other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition. If the license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company will recognize revenue from non-refundable, up-front fees allocated to the license at the point in time when the license is transferred to the customer and the customer is able to use and benefit from the license.

e) Cash and Cash Equivalents

Cash and cash equivalents consist of cash and highly liquid investments that are readily convertible into cash with original maturities of 90 days or less at acquisition date.

f) Short-Term Investments

Short-term investments are classified as held-to-maturity, are initially recognized at fair value and are subsequently accounted for at amortized cost. They are comprised of guaranteed investment certificates with a maturity greater than 90 days but less than one year and, as such, are classified as current assets.

g) Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentration of credit risk consist primarily of cash and cash equivalents and investment securities classified as held-to-maturity. The Company maintains deposits at major financial institutions. Additionally, the Company has adopted an investment policy that includes guidelines relative to credit quality, diversification of maturities and liquidity.

Milestone Pharmaceuticals Inc.
Notes to Consolidated Financial Statements
(in thousands of US dollars, except share and per share data)

h) Currency Risk

The Company is exposed to currency risk due to financial instruments denominated in foreign currencies. The Company is exposed to the Canadian dollar currency risk and does not enter into arrangements to hedge its currency risk exposure.

i) Property and Equipment

Property and equipment is stated at historical cost less accumulated amortization. Expenditures for maintenance and repairs are recorded to expense as incurred. The Company reviews its property and equipment whenever events or changes in circumstances indicate that the carrying value of certain assets might not be recoverable and recognizes an impairment loss when it is probable that an asset's realizable value is less than the carrying value. To date, no such impairment losses have been recorded. Amortization is calculated using the straight-line method over the following estimated useful lives of the assets:

Computer hardware and software	3 years
Office equipment	5 years
Furniture and fixtures	5 years
Leasehold improvements	over the lease term

j) Leases

At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the unique facts and circumstances present in the arrangement. Leases with a term greater than one year are recognized on the balance sheet as right-of-use assets and short-term and long-term lease liabilities, as applicable. The Company does not have financing leases.

Operating lease liabilities and their corresponding right-of-use assets are initially recorded based on the present value of lease payments over the expected remaining lease term. Right-of-use assets are subsequently accounted for as long-lived assets, including evaluating for indicators of impairment. Certain adjustments to the right-of-use asset may be required for items such as incentives received. The interest rate implicit in lease contracts is typically not readily determinable. As a result, the Company utilizes its incremental borrowing rate to discount lease payments, which reflects the fixed rate at which the Company could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment. Prospectively, the Company will adjust the right-of-use assets for straight-line rent expense or any incentives received and remeasure the lease liability at the net present value using the same incremental borrowing rate that was in effect as of the lease commencement or transition date.

The Company has elected not to recognize leases with an original term of one year or less on the balance sheet. The Company typically only includes an initial lease term in its assessment of a lease arrangement. Options to renew a lease are not included in the Company's assessment unless there is reasonable certainty that the Company will renew.

k) Pre-funded Warrants

Pre-funded warrants allow the holder to pay little or no consideration to receive the shares upon exercise of the warrant. The pre-funded warrants do not meet the definition of a derivative under ASC 815 because their fair value at issuance is equal to the fair value of the shares underlying the warrant. As such, they have the characteristics of a prepaid forward sale of equity. As a result, the pre-funded warrants are accounted for as equity instruments.

l) Share Issuance Costs

Share issuance costs applicable to the issuance of equity instruments are recorded as a reduction of the financing equity proceeds.

Milestone Pharmaceuticals Inc.
Notes to Consolidated Financial Statements
(in thousands of US dollars, except share and per share data)

m) Research and Development and Investment Tax Credits

Research and development costs are charged to expense as costs are incurred in performing research and development activities. The Company's research and development costs consist primarily of salaries and fees paid to contract research organizations (CROs) and to contract manufacturing organizations (CMOs).

Clinical trial expenses include direct costs associated with CROs, direct CMO costs for the formulation and packaging of clinical trial material, as well as investigator and patient related costs at sites at which the Company's trials are being conducted. Direct costs associated with the Company's CROs and CMOs are generally payable on a time and materials basis, or when milestones are achieved. The invoicing from clinical trial sites can lag several months. The Company records expenses for its clinical trial activities performed by third parties based upon estimates of the percentage of work completed of the total work over the life of the individual study in accordance with agreements established with CROs and clinical trial sites. The Company determines the estimates through discussions with internal clinical personnel, CROs and CMOs as to the progress or stage of completion of trials or services and the agreed upon fee to be paid for such services based on facts and circumstances known to the Company as of each consolidated balance sheet date. The actual costs and timing of clinical trials are highly uncertain, subject to risks and may change depending upon a number of factors, including the Company's clinical development plan. If the actual timing of the performance of services or the level of effort varies from the estimate, the Company will adjust the accrual accordingly.

The Company recognizes the benefit of Canadian research and development tax credits as a reduction of research and development costs for fully refundable investment tax credits and as a reduction of income taxes for investment tax credits that can only be claimed against income taxes payable when there is reasonable assurance that the claim will be recovered.

n) Income Taxes

The provision for income taxes is computed using the liability method. Under this method, deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities. Deferred tax assets and liabilities are measured using enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is recorded to reduce the carrying amount of deferred income tax assets until when it is more likely than not that these assets will be realized. Tax benefits related to tax positions not deemed to meet the "more-likely-than-not" threshold are not permitted to be recognized in the consolidated financial statements.

o) Foreign Currency Translation and Transactions

The functional currency of the Company is the US dollar. Accordingly, transactions denominated in currencies other than the functional currency are measured and recorded in the functional currency at the exchange rate in effect on the date of the transactions. At each consolidated balance sheet date, monetary assets and liabilities denominated in currencies other than the functional currency are remeasured using the exchange rate in effect at that date. Non-monetary assets and liabilities and revenue and expense items denominated in foreign currencies are translated into the functional currency using the exchange rate prevailing at the dates of the respective transactions. Any gains or losses arising on remeasurement are included in the consolidated statement of loss.

p) Share Based Compensation

The Company has a share based compensation plan which is described in detail in note 8 and records all share-based payments, including grants of employee share options, at their fair values. The fair value of share options granted to employees and non-employees is estimated at the date of grant using the Black-Scholes option pricing model. The Company recognizes share based compensation expense over the requisite service period of the individual grants, which equals the vesting period, using the straight-line method. Forfeitures, if any, are recorded as they occur. Any consideration paid by employees on exercising share options and the corresponding portion previously credited to contributed surplus are credited to share capital. The Black-Scholes option pricing model used by the Company to calculate option values was developed to estimate fair value.

Milestone Pharmaceuticals Inc.
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The Company approved an employee share purchase plan in April 2019, which became effective on May 8, 2019 and is described in note 9. The plan provides a means by which eligible employees of the Company may be given an opportunity to purchase common shares. The plan permits the Company to grant a series of purchase rights to eligible employees under an employee stock purchase plan.

q) Recently Adopted Accounting Pronouncements

In November 2023, the Financial Accounting Standards Board (“FASB”) issued Accounting Standard Update (“ASU”) 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures (“ASU 2023-07”), which requires public entities to disclose information about their reportable segments’ significant expenses on an interim and annual basis. ASU 2023-07 is effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Early adoption is permitted. The Company is evaluating the effect of adopting this new accounting guidance on its financial statements, but does not intend to early adopt.

In December 2023, the FASB issued ASU 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures (“ASU 2023-09”). The amendments in this update require that public business entities on an annual basis (1) disclose specific categories in the rate reconciliation and (2) provide additional information for reconciling items that meet a quantitative threshold (if the effect of those reconciling items is equal to or greater than 5 percent of the amount computed by multiplying pretax income [or loss] by the applicable statutory income tax rate). The amendments also require entities on an annual basis to disclose disaggregated amounts of income taxes paid. ASU 2023-09 is effective for annual periods beginning after December 15, 2024. Early adoption is permitted for annual financial statements that have not yet been issued or made available for issuance. The Company is evaluating the effect of adopting this new accounting guidance on its financial statements, but does not intend to early adopt.

r) Significant Risks and Uncertainties

The Company is subject to challenges and risks specific to its business and its ability to execute on its strategy, as well as risks and uncertainties common to companies in the pharmaceutical industry, including, without limitation, risks and uncertainties associated with: obtaining regulatory approval of its product candidate; delays or problems in the supply of its study drug or failure to comply with manufacturing regulations; identifying, acquiring or in-licensing product candidates; pharmaceutical product development and the inherent uncertainty of clinical success; and the challenges of protecting and enhancing its intellectual property rights; and complying with applicable regulatory requirements.

Further, the Company may be impacted by general economic, political, and market conditions, including deteriorating market conditions due to investor concerns regarding inflation, armed conflicts, and overall fluctuations in the financial markets in the U.S. and abroad.

s) Sources of Liquidity and Funding Requirements

The Company has incurred operating losses and experienced negative operating cash flows since its inception and anticipates to continue to incur losses for at least the next several years. As of December 31, 2023, the Company had cash and cash equivalents and short-term investments of \$66.0 million and an accumulated deficit of \$326.0 million.

Management has evaluated the Company’s operating plan against its existing cash and cash equivalents and determined that the Company expects to be able to support its operations for at least the next 12 months from the date of issuance of these consolidated financial statements. The Company has historically financed its operations primarily through the sale of equity securities, convertible notes and, to a lesser extent from cash received pursuant to its license agreement. To date, the Company has not generated any revenue from product sales. Management expects operating losses and negative cash flows from operations to continue for the foreseeable future. The Company currently plans to raise additional funding as required based on the status of its clinical trials, progress of New Drug Application, or NDA, filing, and projected cash flows. There can be no assurance that, in the event the Company requires additional financing, such financing will be available at terms acceptable to the Company, if at all. Failure to generate sufficient cash flows from operations, raise

Milestone Pharmaceuticals Inc.
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additional capital and reduce discretionary spending should additional capital not become available could have a material adverse effect on the Company's ability to achieve its business objectives.

3 Revenue

The Company recorded revenue of \$1.0 million for the year ended December 31, 2023. This revenue was the result of having reached a milestone pursuant to our License and Collaboration Agreement, dated May 15, 2021, with Ji Xing Pharmaceuticals Limited (such party "Ji Xing" and , such agreement, the "Ji Xing License Agreement") due upon the successful initiation of a Phase 1 Clinical Trial of a pharmaceutical product that uses a device to deliver etripamil by nasal spray by or on behalf of Ji Xing for the treatment of PSVT in the People's Republic of China (the "Territory"), including mainland China, Hong Kong Special Administrative Region, Macau Special Administrative Region and Taiwan.

The Company recorded revenue of \$5.0 million for the year ended December 31, 2022. This revenue was related to two milestones reached as a result of the first patient dosed in a Phase 3 Clinical Trial for the treatment of PSVT in the Territory pursuant to the Ji Xing License Agreement and the successful completion of a Phase 3 clinical trial for the treatment of PSVT in the United States.

Strategic Partnerships

Ji Xing

On May 15, 2021, the Company entered into the License Agreement with Ji Xing, which is an entity affiliated with RTW Investments, LP, or RTW, a beneficial owner of approximately 9.7% of the Company's common shares, as of December 31, 2023. Under the License Agreement, the Company granted Ji Xing exclusive development and commercialization rights to any pharmaceutical product that uses a device to deliver the Company's proprietary calcium channel blocker known as etripamil by nasal spray for all prophylactic and therapeutic uses in humans in the Territory. Ji Xing will be responsible for development and regulatory activities in the Territory, and the Company will remain responsible for certain manufacturing activities in the Territory, subject to the supply agreement subsequently entered into by the Company and Ji Xing as contemplated by the License Agreement (the Supply Agreement). The Company received a non-refundable upfront cash payment of \$15 million and the right to future payments of up to \$107.5 million in total development and sales milestone payments. In addition, the Company is entitled to receive tiered royalty payments ranging from a percentage in the low double digits to the high double digits of Net Sales (as defined in the License Agreement) of all products sold in the Territory.

Management evaluated all of the promised goods or services within the contract and determined that such goods and services were separate performance obligations. The Company determined that the license granted was a separate performance obligation as Ji Xing can benefit from the license granted on its own after the transfer of the license, as it does not require any significant development, regulatory or commercialization activities from Milestone. Ji Xing is responsible for all development, regulatory and commercialization activities in the Territory, including the performance of clinical trials necessary for regulatory approval, and is responsible for all such related costs. Supply of the product can be provided by another entity, as the Company currently uses a CMO for the production of etripamil without subsequent significant modification or customization by the Company, therefore the Company determined the obligation to supply product is a separate and distinct obligation. The Company concluded that the obligation for participation on the various governance committees was distinct as the services could be performed by an outside party, however it was determined to be immaterial after estimating the stand-alone cost compared to the License Agreement as a whole. As a result, the Company concluded there were two material and distinct performance obligations to account for under ASC 606 at the inception of the License Agreement.

4 Short-term Investments

As of December 31, 2023, short-term investments of \$52.2 million were comprised of term deposits issued in US currency, earning interest between 5.53% and 5.95%, maturing between January 16, 2024 and June 19, 2024. These short-term investments were in scope of ASC 320, *Investments-Debt Securities*. The short-term investments maturity is greater than

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90 days but less than one year, and they were classified as held to maturity, recorded as current assets and were accounted for at amortized cost. Interest income earned on short-term investments is reported in interest income. The Company had short-term investments of \$56.9 million as of December 31, 2022.

5 Leases

On May 20, 2022, the Company entered into a new lease arrangement for a 62-month term for new office space located in Charlotte, NC. The Company recognized the operating lease right-of-use asset and operating lease liabilities at the lease commencement date on August 1, 2022. The interest rate implicit in lease contracts is not readily determinable and the Company does not have a public credit rating and carries no debt. As such, several factors were considered in the determination of the Company's incremental borrowing rate used in determining the present value of lease payments. The Company's examined credit ratings for similar companies, assumed equivalency between the Canadian and U.S. markets for collateralized debt and used rates near the 62-month period. This resulted in an incremental borrowing rate of 7.55%. Lease expenses are recognized on a straight-line basis over the lease term, which is accomplished by increasing the amortization of the right-of-use asset as interest expense on the lease liability declines over the lease term.

On July 1, 2020, the Company entered into an arrangement for the lease renewal for its headquarters located in Ville Saint-Laurent, Quebec. The 5-year lease term is from December 1, 2020 expiring on November 30, 2025. The Company recorded the operating lease right-of-use asset and operating lease liabilities at the effective lease arrangement date of July 1, 2020. The Company's examined credit ratings for similar companies, assumed equivalency between the Canadian and U.S. markets for collateralized debt and used rates for the remaining lease term of 65 months. This resulted in an incremental borrowing rate of 5.26%. Lease expenses are recognized on a straight-line basis over the lease term, which is accomplished by increasing the amortization of the right-of-use asset as interest expense on the lease liability declines over the lease term. The Company is not reasonably certain of renewing the lease following the current renewal option and recognized the right-of-use asset and operating lease liabilities to November 30, 2025.

The Company's operating office leases right-of-use assets as at December 31 were as follows:

	2023	2022
Opening balance	\$ 2,423	\$ 711
New operating lease right-of-use asset	—	2,103
Amortization of right-of-use asset	(506)	(391)
Closing balance	\$ 1,917	\$ 2,423

Operating lease expenses of \$681 and \$490 are included in general and administrative operating expenses in the consolidated statement of loss, and within operating activities in the statement of cash flows for the years ended December 31, 2023 and 2022, respectively and are comprised of two operating lease right-of-use assets and one operating lease of less than 12 months.

The following table summarizes the future minimum lease payments of right-of-use assets operating leases as at December 31, 2023:

January 1, 2024 to December 31, 2024	673
January 1, 2025 to December 31, 2025	670
January 1, 2026 to December 31, 2026	530
January 1, 2027 to September 30, 2027	406
	<u>2,279</u>
Less interest	(276)
	<u>\$ 2,003</u>

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6 Property and equipment

Property and equipment consist of the following at December 31:

	2023	2022
Computer hardware and software	\$ 226	\$ 120
Office equipment	157	155
Leasehold improvements	85	102
Total	\$ 468	\$ 377
Less accumulated depreciation	(191)	(120)
Property and equipment, net	<u>\$ 277</u>	<u>\$ 257</u>

No disposal was recorded for the year ended December 31, 2023. During the year ended December 31, 2022, the Company recorded a disposal of \$348, which resulted in a loss of \$141. For the years ended December 31, 2023 and 2022, depreciation expense was \$92 and \$89, respectively.

7 Accounts payable and accrued liabilities

Accounts payable and accrued liabilities comprised the following as of December 31:

	2023	2022
Trade accounts payable	\$ 3,981	\$ 2,263
Accrued compensation and benefits payable	712	2,573
Accrued research and development liabilities	894	404
Accrued commercial liabilities	710	149
Other accrued liabilities	383	255
Total	<u>\$ 6,680</u>	<u>\$ 5,644</u>

8 Shareholders' Equity

Authorized Share Capital

The Company has authorized and issued common shares, voting and participating, without par value, of which unlimited shares were authorized and 33,483,111 shares were issued and outstanding as of December 31, 2023.

As of December 31, 2023, there were 1,463,936 common shares available for issuance under the Employee Stock Purchase Plan, or the "ESPP". The Company has issued 142,006 shares of common stock pursuant to the ESPP as of December 31, 2023.

In August 2022, the Company issued and sold 361,236 common shares under the Open Market Sale AgreementSM, or the Sales Agreement, with Jefferies LLC with respect to an at-the-market offering program, or the ATM Program, for proceeds of \$2.6 million (net of issuance costs of \$0.1 million).

Shelf Registration

On November 12, 2021, the Company entered into an agreement and the Company may sell any combination of the securities described in this prospectus in one or more offerings up to a total aggregate offering price of \$250,000,000.

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Pre-funded Warrants – Exchange Agreement

On March 22, 2023, the Company entered into an exchange agreement, or the “Exchange Agreement”, with entities affiliated with RTW, or the “Exchanging Stockholders”, pursuant to which the Company exchanged an aggregate of 1,059,000 shares of the Company’s common shares owned by the Exchanging Stockholders for pre-funded warrants, or the Exchange Warrants, to purchase an aggregate of 1,059,000 common shares, with an exercise price of \$0.001 per share and no expiration date. The Exchange Warrants are exercisable immediately and no additional cash consideration was rendered in exchange for the warrants. A holder of the Exchange Warrants (together with its affiliates and other attribution parties) may not exercise any portion of an Exchange Warrant to the extent that immediately prior to or after giving effect to such exercise the holder, together with its affiliates, would beneficially own more than 9.99% of the Company’s outstanding common shares immediately after exercise, which percentage may be increased or decreased to any other percentage specified not in excess of 9.99% at the holder's election upon 61 days' notice to the Company subject to the terms of the Exchange Warrants.

Open Market Sale Agreement

On July 29, 2020, the Company entered into an Open Market Sale AgreementSM with respect to an at-the-market offering program (ATM Program) under which the Company may issue and sell its common shares having an aggregate offering price of up to \$50 million. The Company has sold 361,236 shares under the ATM program as of the date of this filing.

9 Share Based Compensation

Under the Company’s 2019 Equity Incentive Plan (the 2019 Plan) and the Company’s Stock Option Plan (the 2011 Plan), unless otherwise decided by the Board of Directors, options vest and are exercisable as follows: 25% vest and are exercisable on the one year anniversary of the grant date and one thirty-sixth (1/36th) of the remaining options vest and are exercisable each month thereafter, such that options are vested in full on four-year anniversary of the grant date.

On November 10, 2021, the Company established a 2021 Inducement Plan under Nasdaq Marketplace Rules through the granting of awards. This 2021 Inducement Plan is intended to help the Company provide an inducement material for certain individuals to enter into employment with the Company, incentives for such persons to exert maximum efforts for the success of the Company and provide a means by which employees may benefit from increases in value of the common shares. As of December 31, 2023, there were 1,000,000 shares available for issuance under the 2021 Inducement Plan, of which 375,000 shares were available for future grants.

On January 1, 2023 and on January 1, 2022, the number of the Company’s common shares reserved for issuance under the 2019 Plan increased by 1,371,440 and 1,195,902 common shares, respectively. Further, on July 5, 2022, the number of the Company’s common shares reserved for issuance under the 2019 Plan increased by 1,000,000 common shares. In addition, 125,323 options have been forfeited under the 2011 Plan since the adoption of the 2019 Plan and have become available for issuance under the 2019 Plan. As of December 31, 2023, 561,000 of previously issued options had been cancelled under the 2019 Plan and were available for future grants. As of December 31, 2023, there were 8,182,946 common shares available for issuance under the 2019 Plan, of which 1,704,960 common shares were available for future grants.

On July 15, 2022, the Company offered an Employee Share Purchase Plan, or ESPP, in which participation is available to substantially all of our employees in the United States and Canada who meet certain service eligibility requirements. As of December 31, 2023, the Company has 1,463,936 common shares available under the ESPP. As of December 31, 2023, the Company has issued 142,006 shares of common stock pursuant to the ESPP.

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The total outstanding and exercisable options from the 2011 Plan, 2019 Plan and Inducement Plan as of December 31 were as follows:

	2023				Weighted average exercise price
	Number of shares			Total	
	2019 Plan	Inducement Plan	2011 Plan		
Outstanding at beginning of year - 2011 Plan	—	—	1,802,672	1,802,672	\$ 2.05
Outstanding at beginning of year - 2019 Plan	5,314,312	—	—	5,314,312	8.35
Outstanding at beginning of year - Inducement Plan	—	503,000	—	503,000	6.41
Granted - 2019 Plan	1,875,400	—	—	1,875,400	3.61
Granted - Inducement Plan	—	122,000	—	122,000	2.98
Exercised - 2019 Plan	(7,000)	—	—	(7,000)	3.74
Exercised - 2011 Plan	—	—	(107,103)	(107,103)	1.52
Forfeited - 2019 Plan	(156,198)	—	—	(156,198)	6.13
Expired - 2019 Plan	(58,617)	—	—	(58,617)	11.52
Expired - 2011 Plan	—	—	(1,336)	(1,336)	0.91
Cancelled - 2019 Plan	(561,000)	—	—	(561,000)	21.73
Outstanding at end of period	6,406,897	625,000	1,694,233	8,726,130	\$ 5.09
Outstanding at end of period - Weighted average exercise price	\$ 5.82	\$ 5.74	\$ 2.09		
Exercisable at end of period	3,228,422	221,833	1,694,233	5,144,488	\$ 5.32
Exercisable at end of period - Weighted average exercise price	\$ 6.93	\$ 6.42	\$ 2.09		

	2022				Weighted average exercise price
	Number of shares			Total	
	2019 Plan	Inducement Plan	2011 Plan		
Outstanding at beginning of year - 2011 Plan	—	—	1,995,971	1,995,971	\$ 2.07
Outstanding at beginning of year - 2019 Plan	3,749,834	—	—	3,749,834	9.52
Granted - 2019 Plan	1,790,700	—	—	1,790,700	5.76
Granted - Inducement Plan	—	523,000	—	523,000	6.37
Exercised - 2019 Plan	(45,089)	—	—	(45,089)	3.83
Exercised - 2011 Plan	—	—	(172,595)	(172,595)	1.43
Forfeited - Inducement Plan	—	(20,000)	—	(20,000)	5.48
Forfeited - 2019 Plan	(181,133)	—	—	(181,133)	8.00
Forfeited - 2011 Plan	—	—	(19,583)	(19,583)	9.35
Expired - 2011 Plan	—	—	(1,121)	(1,121)	0.96
Outstanding at end of period	5,314,312	503,000	1,802,672	7,619,984	\$ 6.73
Outstanding at end of period - Weighted average exercise price	\$ 8.35	\$ 6.41	\$ 2.05		
Exercisable at end of period	2,390,549	—	1,800,546	4,191,095	\$ 6.52
Exercisable at end of period - Weighted average exercise price	\$ 9.90	\$ —	\$ 2.04		

The weighted average remaining contractual life was 6.55 and 7.47 years for outstanding options as of December 31, 2023 and 2022, respectively. The weighted average remaining contractual life was 5.93 and 6.37 years for vested options, as of December 31, 2023 and 2022, respectively.

There was \$11.4 million and \$15.7 million total unrecognized compensation cost related to non-vested share options as of December 31, 2023 and 2022, respectively. The share options are expected to be recognized over a remaining weighted average vesting period of 2.27 years and 2.36 years as of December 31, 2023 and 2022, respectively. For the year ending December 31, 2023, there were 561,000 shares cancelled under the 2019 plan, which resulted in additional share-based compensation expense of \$0.6 million.

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Options granted are valued using the Black-Scholes option pricing model. Amortization of the fair value of the options over vesting years has been expensed and credited to additional paid-in capital in shareholders' equity. The non-vested options as of December 31 were as follows:

	2023				Weighted average fair value
	Number of options			Total	
	2019 Plan	Inducement Plan	2011 Plan		
Non-vested share options at beginning of year - 2011 Plan	—	—	2,126	2,126	\$ 6.64
Non-vested share options at beginning of year - 2019 Plan	2,923,763	—	—	2,923,763	5.30
Non-vested share options at beginning of year - Inducement Plan	—	503,000	—	503,000	4.84
Granted - 2019 Plan	1,875,400	—	—	1,875,400	2.87
Granted - Inducement Plan	—	122,000	—	122,000	2.30
Vested, outstanding 2011 Plan	—	—	(2,126)	(2,126)	6.64
Vested, outstanding 2019 Plan	(1,504,329)	—	—	(1,504,329)	5.88
Vested, outstanding Inducement Plan	—	(221,833)	—	(221,833)	4.85
Forfeited - 2019 Plan	(116,359)	—	—	(116,359)	3.96
Non-vested share options at end of period	3,178,475	403,167	—	3,581,642	\$ 3.69
Non-vested share options at end of period - Weighted average fair value	<u>\$ 3.64</u>	<u>\$ 4.07</u>	<u>\$ —</u>		

	2022				Weighted average fair value
	Number of options			Total	
	2019 Plan	Inducement Plan	2011 Plan		
Non-vested share options at beginning of year - 2011 Plan	—	—	200,639	200,639	\$ 1.86
Non-vested share options at beginning of year - 2019 Plan	2,655,518	—	—	2,655,518	6.40
Granted - 2019 Plan	1,790,700	—	—	1,790,700	4.37
Granted - Inducement Plan	—	523,000	—	523,000	4.81
Vested, outstanding 2011 Plan	—	—	(198,317)	(198,317)	1.81
Forfeited - 2011 Plan	—	—	(196)	(196)	1.91
Forfeited - Inducement Plan	—	(20,000)	—	(20,000)	4.18
Forfeited - 2019 Plan	(145,664)	—	—	(145,664)	5.49
Vested, outstanding 2019 Plan	(1,376,791)	—	—	(1,376,791)	6.19
Non-vested share options at end of period	2,923,763	503,000	2,126	3,428,889	\$ 5.24
Non-vested share options at end of period - Weighted average fair value	<u>\$ 5.30</u>	<u>\$ 4.84</u>	<u>\$ 6.64</u>		

The following table summarizes information with respect to share options outstanding as of December 31, 2023:

Exercise price	Options outstanding			Options exercisable		
	Number of options	Weighted average remaining contractual life (years)	Weighted average exercise price	Number of options	Weighted average remaining contractual life (years)	Weighted average exercise price
\$0.84-\$1.73	949,136	3.11	\$ 1.43	949,136	3.11	\$ 1.43
\$1.74-\$3.2	915,192	4.77	\$ 2.69	709,192	4.76	\$ 2.59
\$3.21-\$5.25	2,351,850	7.62	\$ 3.67	688,000	6.63	\$ 3.76
\$5.26-\$6.36	3,473,464	7.37	\$ 5.90	2,133,496	7.34	\$ 5.96
\$6.37-\$8.5	667,833	6.43	\$ 6.85	316,521	6.58	\$ 6.84
\$8.51-\$15.5	57,905	6.27	\$ 9.08	42,780	5.42	\$ 9.27
\$15.51-\$20.5	65,100	5.84	\$ 17.21	64,829	5.84	\$ 17.21
\$20.51-\$22.45	245,650	5.21	\$ 21.48	240,534	5.21	\$ 21.48
Total	<u>8,726,130</u>	<u>6.55</u>	<u>\$ 5.09</u>	<u>5,144,488</u>	<u>5.93</u>	<u>\$ 5.32</u>

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The fair value of options is measured using Black-Scholes valuation model. This model also requires assumptions, including expected option life, volatility, risk-free interest rate and dividend yield, which greatly affect the calculated values:

	Year ended December 31,	
	2023	2022
Exercise price	\$ 3.58	\$ 5.90
Share price	\$ 3.58	\$ 5.90
Volatility	97 %	92 %
Risk-free interest rate	3.97 %	2.43 %
Expected life	6.01 years	6.03 years
Dividend	0 %	0 %

Expected volatility is determined using comparable companies for which the information is publicly available. The risk-free interest rate is determined based on the U.S. sovereign rates benchmark in effect at the time of grant with a remaining term equal to the expected life of the option. Expected option life is determined based on the simplified method as the Company does not have sufficient historical exercise data to provide a reasonable basis upon which to estimate expected term. The simplified method is an average of the contractual term of the options and its ordinary vesting period. Dividend yield is based on the share option's exercise price and expected annual dividend rate at the time of grant.

The Company recognized share-based compensation expense as follows for the years ended December 31:

	2023	2022
Administration	\$ 4,849	\$ 4,229
Research and development	3,281	3,483
Commercial activities	1,404	1,336
Total	<u>\$ 9,534</u>	<u>\$ 9,048</u>

10 Debt

On March 27, 2023, we entered into a note purchase agreement, or the "Note Purchase Agreement", with RTW Investments LP and certain of its affiliates, or collectively, RTW.

On March 29, 2023, we closed the transactions contemplated by the Note Purchase Agreement, and issued and sold \$50.0 million principal amount of 6.0% Convertible Senior Notes due 2029, or the "2029 Convertible Notes", to the holders.

The 2029 Convertible Notes are senior secured obligations and are guaranteed on a senior secured basis by our wholly owned subsidiary, Milestone Pharmaceuticals USA, Inc. Interest at the annual rate of 6.0% is payable quarterly in cash or, at our option, payable in kind for the first three years. The maturity date for the 2029 Convertible Notes is March 31, 2029, the "Maturity Date". The obligations under the 2029 Convertible Notes are secured by substantially all of our and our subsidiary guarantor's assets.

Each \$1,000 of principal of the 2029 Convertible Notes (including any interest added thereto as payment in kind) is convertible into 191.0548 shares of our common shares, equivalent to an initial conversion price of approximately \$5.23 per share, subject to customary anti-dilution and other adjustments. In addition, following a notice of redemption or certain corporate events that occur prior to the Maturity Date, we will, in certain circumstances, increase the conversion rate for a holder who elects to convert its 2029 Convertible Notes in connection with such notice of redemption or corporate event.

On or after March 27, 2027, the 2029 Convertible Notes are redeemable by us, subject to certain conditions, if the closing sale price of the common shares exceeds 150% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including the trading day immediately preceding the date on which we provide notice of redemption, during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on

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which we provide notice of redemption, at a redemption price equal to 100% of the principal amount of the 2029 Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

In accounting for the issuance of the Convertible Notes, the Company determined there were no embedded features, which require bifurcation between debt and equity components. As a result, the Convertible Notes are accounted for as a liability. As of December 31, 2023, the estimated fair value of the Convertible Notes was approximately \$44.3 million based on level 2 inputs.

The net carrying amount of the Convertible Note were as follows:

	As of December 31,	
	2023	2022
Original principal	\$ 50,000	\$ —
Paid in kind (PIK) interest	2,310	—
Unamortized debt discount	(547)	—
Unamortized debt issuance costs	(1,991)	—
Total	\$ 49,772	\$ —

The following table presents the total amount of interest cost recognized relating to the 2029 Convertible Notes:

	Year ended December 31,	
	2023	2022
Contractual interest expense	\$ 2,310	\$ —
Amortization of debt discount	53	—
Amortization of debt issuance costs	191	—
Total interest expense	\$ 2,554	\$ —

11 Net loss per share

Basic and diluted net loss per common share is determined by dividing net loss applicable to common shareholders by the weighted average number of common shares and pre-funded warrants outstanding during the period. In addition to the conversion feature on the 2029 Convertible Notes described above, which the Company reviewed and concluded that if-converted would be anti-dilutive due to the facts surrounding the feature, the following potentially dilutive securities have also been excluded from the computation of diluted weighted average shares outstanding as of December 31, as they would be anti-dilutive:

	2023	2022
Share options	8,726,130	7,619,984

Amounts in the table above reflect the common share equivalents of the noted instruments.

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12 Income taxes

A reconciliation between tax expense and the product of accounting income multiplied by the basic income tax rate for the years ended December 31, 2023 and 2022 is as follows:

	2023	2022
Loss before income taxes	\$ (59,685)	\$ (58,388)
Basic income tax rate	26.50 %	26.50 %
Computed income tax recovery	(15,817)	(15,473)
Effect on income tax rate resulting from		
Accounting charges not deductible for tax purposes	4	13
Non-deductible share-based compensation	4,663	2,704
Share issue costs	—	32
Accretion of investments	—	(26)
Tax benefits of current period losses and other tax assets	10,945	12,387
Valuation allowance for prior year adjustment	—	112
Other	205	251
Income tax expense (recovery) reported in the consolidated statements of loss	\$ —	\$ —

The Company has incurred Canadian federal and provincial net operating losses (NOLs) from inception. As of December 31, 2023, the Company has NOL carry-forwards of approximately \$206.5 million and \$203.4 million, respectively, for Canadian federal and Québec purposes, available to reduce future taxable income, which expire beginning in 2026 through 2043. The Company also has scientific research and experimental development expenditures of approximately \$26.5 million and \$31.8 million, respectively, for Canadian federal and Québec income tax purposes, which have not been deducted. These expenditures are available to reduce future taxable income and have an unlimited carry-forward period. Research and development tax credits and expenditures are subject to verification by the tax authorities, and, accordingly, these amounts may vary.

The Company has incurred NOLs for U.S. tax purposes. As of December 31, 2023, the Company has carry-forwards of approximately \$54.0 million related to U.S. NOLs that may be carried forward indefinitely and are available to reduce future taxable income.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The net deferred tax assets have not been recognized in these financial statements because the criteria for recognition of these assets were not met.

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The Company's deferred tax assets consist of the following for the years ended December 31, 2023 and 2022:

	2023	2022
Net operating loss carry-forwards	\$ 66,656	\$ 57,952
Tax basis of property and equipment in excess of carrying values	67	97
Tax basis of right of use assets	(421)	—
Tax basis of lease liability	438	—
Tax basis of reserves	6	—
Federal SR&ED investment tax credits	3,735	545
Taxation of federal SR&ED investment tax credits	(990)	(82)
Research and development expenditures	7,643	6,323
Financing costs	186	1,008
Stock based compensation	2,850	—
Change in tax rates	—	51
Others	45	15
Total Net deferred tax assets	80,215	65,909
Less Valuation allowance	(80,215)	(65,909)
Net deferred tax assets	\$ —	\$ —

The Company files income tax returns in Canada and in the United States. The Company is subject to Canada Revenue Agency and Revenu Québec examination for fiscal years 2018 to 2023 due to unexpired statute of limitation periods and is subject to US Federal and state income tax examination for fiscal years 2020 to 2023.

13 Government assistance

The Company incurs research and development expenditures that are eligible for investment tax credits. The investment tax credits recorded are based on management's estimates of amounts expected to be recovered and are subject to audit by the taxation authorities. These amounts have been recorded as a reduction of research and development expenditures the years ended December 31, 2023 and 2022 for an amount of \$312 and \$456, respectively.

14 Commitments

In the normal course of business, the Company enters into contracts with clinical research organizations, drug manufacturers and other vendors for preclinical and clinical research studies, research and development supplies and other services and products for operating purposes. These contracts generally provide for termination on notice, and therefore are cancellable contracts. Therefore, as at December 31, 2023 there are no contractual commitments, except for office leases (see note 5).

15 Currency risk

The Company is exposed to the financial risk related to the fluctuation of foreign exchange rates and the degree of volatility of those rates. The foreign currency risk is limited to the portion of the Company's business transactions denominated in currency other than US dollars. The following table provides an indication of the Company's exposure to the Canadian dollar, which is expressed in US dollars as of December 31:

	2023	2022
Cash	\$ 2,441	\$ 262
Other receivables	263	262
Operating lease assets	311	462
Accounts payable and accrued liabilities	(52)	(484)
Operating lease liabilities	(306)	(444)
Net financial position exposure	\$ 2,657	\$ 58

The Company does not enter into arrangements to hedge its currency risk exposure.

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16 Fair value of financial instruments

Pursuant to the accounting guidance for fair value measurement and its subsequent updates, fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e. the exit price) in an orderly transaction between market participants at the measurement date. The accounting guidance establishes a hierarchy for inputs used in measuring fair value that minimizes the use of unobservable inputs by requiring the use of observable market data when available. Observable inputs are inputs that market participants would use in pricing the asset or liability based on active market data. Unobservable inputs are inputs that reflect the assumptions market participants would use in pricing the asset or liability based on the best information available in the circumstances.

The fair value hierarchy is broken down into the three input levels summarized below:

Level 1— Valuations are based on quoted prices in active markets for identical assets or liabilities and readily accessible by the Company at the reporting date.

Level 2— Valuations based on inputs other than the quoted prices in active markets that are observable either directly or indirectly in active markets.

Level 3— Valuations based on unobservable inputs in which there is little or no market data, which requires the Company to develop its own assumptions.

For the years ending December 31, 2023 and December 31, 2022, there were no financial instruments measured at fair value on a recurring or non-recurring basis.

17 Royalty Purchase Agreement

On March 27, 2023, we entered into a purchase and sale agreement, or the “Royalty Purchase Agreement”, with RTW and certain of its affiliates.

Pursuant to the Royalty Purchase Agreement, RTW agreed to purchase, following the U.S. Food and Drug Administration approval of etripamil (subject to certain conditions), in exchange for a purchase price of \$75.0 million, the right to receive a tiered quarterly royalty payments, or the “Royalty Interest”, on the annual net product sales of etripamil in the United States in an amount equal to: (i) 7%, or the “Initial Tier Royalty”, of annual net sales up to \$500 million, (ii) 4% of annual net sales greater than \$500 million and less than or equal to \$800 million, and (iii) 1% of annual net sales greater than \$800 million. If certain revenue thresholds for aggregate annual net sales are not met, the Initial Tier Royalty will increase to 9.5% beginning on January 1 of the following calendar year until a subsequent sales threshold is attained, at which time the Initial Tier Royalty would revert back to 7%.

Based on the Company’s assessment of the terms and conditions under the Royalty Purchase Agreement, there is no accounting recognition required in these financial statements.

18 Other receivables

Other receivables comprised the following as of December 31:

	2023	2022
Interest receivable	\$ 528	\$ 615
Sales tax receivable	264	261
Clinical receivable	2,400	—
Other current receivable	16	6
	<u>\$ 3,208</u>	<u>\$ 882</u>

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(in thousands of US dollars, except share and per share data)

For the year ended December 31, 2023, the Company recognized a clinical receivable of \$2.4 million for clinical upfront payments made to the CRO that completed the NODE-303 trial. The Company recognized no clinical receivables for the year ended December 31, 2022.

19 Subsequent Events

Financing Transaction

On February 28, 2024, we entered into an underwriting agreement, or the Underwriting Agreement, related to an underwritten public offering, or the Offering, of 16,666,667 of our common shares, without par value, at a public offering price of \$1.50 per share and, in lieu of common shares to certain investors, pre-funded warrants to purchase 3,333,333 Shares at a public offering price of \$1.499 per pre-funded warrant. Under the terms of the Underwriting Agreement, we granted the Underwriters an option to purchase up to an additional 3,000,000 common shares at the same price per share as the other common shares sold in the Offering, which was exercised by the Underwriters in full on February 29, 2024.

Each pre-funded warrant has an exercise price of \$0.001 per share. The pre-funded warrants were exercisable immediately upon issuance, subject to certain beneficial ownership limitations.

The net proceeds to the Company from the Offering, including the proceeds from the exercise by the Underwriters of their option to purchase the additional 3,000,000 common shares in full, was approximately \$32.4 million after deducting underwriting commissions and offering expenses payable by the Company.

The Offering closed on March 4, 2024.

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

We maintain disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the Exchange Act) that are designed to ensure that information required to be disclosed in our periodic and current reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. In addition, the design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, control may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

We carried out an evaluation, under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, 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. Based on this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2023.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rules 13a-15(f) and 15-d-15(f) of the Exchange Act. Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

As of December 31, 2023, management assessed and management concluded the effectiveness of internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control – 2013 Integrated Framework (2013 Framework). Based on this assessment, management concluded that our internal control over financial reporting was effective as of December 31, 2023.

This Annual Report on Form 10-K does not include an attestation report of our independent registered public accounting firm due to a transition period established by the JOBS Act for smaller reporting companies.

Inherent Limitations of Internal Controls

Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal controls 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. 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 the Company have been detected. These inherent

limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Changes in Internal Control Over Financial Reporting

During the year ended December 31, 2023, there have been no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION.

Rule 10b5-1 Trading Arrangements

During our last fiscal quarter, our directors and officers (as defined in Rule 16a-1(f) under the Exchange Act) adopted or terminated the contracts, instructions or written plans for the purchase or sale of our securities set forth in the table below.

Name and Position	Action	Date	Type of Trading Arrangement		Total Shares to be Sold	Expiration Date
			Rule 10b5-1*	Non-Rule 10b5-1**		
Lorenz Muller, Chief Commercial Officer	Termination ¹	January 10, 2024	X		100,000	1/30/2026
* Contract, instruction or written plan intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) under the Exchange Act.						
** “Non-Rule 10b5-1 trading arrangement” as defined in Item 408(c) of Regulation S-K under the Exchange Act.						

¹ Represents the termination of a written plan intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) adopted on October 12, 2023.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

Not applicable.

PART III

Certain information required by Part III is omitted from this report because we will file with the SEC a definitive proxy statement pursuant to Regulation 14A, or the 2024 Proxy Statement, no later than 120 days after the end of our fiscal year, and certain information included therein is incorporated herein by reference.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item is incorporated by reference to the information set forth in the sections titled “Proposal No. 1: Election of Directors,” “Proposal No. 1: Election of Directors—Information Regarding the Board and Corporate Governance,” “Executive Officers,” and “Delinquent Section 16(a) Reports,” if applicable, in our 2024 Proxy Statement.

Information regarding our Code of Business Conduct and Ethics, or the Code of Conduct, required by this item will be contained in our 2024 Proxy Statement under the caption “Proposal No. 1: Election of Directors—Information Regarding the Board of Directors and Corporate Governance—Code of Business Conduct and Ethics,” and is hereby incorporated by reference. If we make any substantive amendments to the Code of Conduct or grants any waiver from a provision of the Code of Conduct to any executive officer or director, we will promptly disclose the nature of the amendment or waiver on its website. The full text of our Code of Conduct is available at the investors section of our website at www.milestonepharma.com. The reference to our website address does not constitute incorporation by reference of the information contained at or available through our website, and you should not consider it to be a part of this Annual Report.

ITEM 11. EXECUTIVE COMPENSATION.

The information required by this item is incorporated by reference to the information set forth in the section titled “Executive Compensation” in our 2024 Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The information required by this item is incorporated by reference to the information set forth in the section titled “Security Ownership of Certain Beneficial Owners and Management” in our 2024 Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

The information required by this item is incorporated by reference to the information set forth in the sections titled “Certain Relationships and Related Transactions” and “Proposal No. 1: Election of Directors—Information Regarding the Board of Directors and Corporate Governance—Director Independence” in our 2024 Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

The information required by this item is incorporated by reference to the information set forth in the section titled “Proposal No. 2: Appointment of Auditor—Auditor Fees” in our 2024 Proxy Statement.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES.

(a)(1) Financial Statements

See Index to Consolidated Financial Statements on page 103 of this Annual Report on Form 10-K, which is incorporated into this item by reference.

(a)(2) Financial Statement Schedules

All financial statement schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

(b) Exhibits

The following list of exhibits includes exhibits submitted with this Annual Report on Form 10-K as filed with the SEC and others incorporated by reference to other filings.

EXHIBIT

NUMBER DESCRIPTION

3.1	Amended Articles of Incorporation (incorporated herein by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on May 15, 2019).
3.2	Amended and Restated Bylaws (incorporated herein by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on May 15, 2019).
4.1	Form of Common Share Certificate (incorporated herein by reference to Exhibit 4.1 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
4.2	Form of Pre-Funded Warrant to Purchase Common Shares (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on July 23, 2020).
4.3	Form of Pre-Funded Warrant (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on October 26, 2020).
4.4	Third Amended and Restated Registration Rights Agreement, by and among the Company and certain of its shareholders, dated October 15, 2018 (incorporated herein by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
4.5	Description of Securities Registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended (incorporated herein by reference to Exhibit 4.5 to the Registrant's Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 29, 2023).
4.6	2021 Inducement Plan, approved by the Board of the Company on November 10, 2021 (incorporated herein by reference to Exhibit 4.10 to the Registrant's Registration Statement on Form S-8 (File No. 333-263807), filed with the SEC on March 24, 2022).
4.7	Form of Exchange Warrant (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 27, 2023).
10.1+	Third Amended and Restated Stock Option Plan (incorporated herein by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
10.2+	Form of Award and Grant Notices under the Third Amended and Restated Stock Option Plan (incorporated herein by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
10.3+	Amended 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on November 10, 2022).
10.4+	Form of U.S. Stock Option Grant Notice and Stock Option Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.4 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
10.5+	Form of U.S. Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.5 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).

- 10.6+ Form of Canadian Stock Option Grant Notice and Option Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.6 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
- 10.7+ Form of Canadian Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.7 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
- 10.8+ 2019 Employee Share Purchase Plan (incorporated herein by reference to Exhibit 4.13 to the Registrant's Registration Statement on Form S-8 (File No. 333-231347), filed with the SEC on May 9, 2019).
- 10.9+ Amended and Restated Employment Agreement between Joseph Oliveto and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.9 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019), as amended by First Amendment to Amended and Restated Employment Agreement between Joseph Oliveto and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.1 to Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on June 8, 2020).
- 10.10+ Employment Agreement between Amit Hasija and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on September 9, 2019), as amended by First Amendment to Employment Agreement between Amit Hasija and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.2 to Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on June 8, 2020).
- 10.11+ Amended and Restated Employment Agreement between Francis Plat and Milestone Pharmaceuticals Inc. (incorporated herein by reference to Exhibit 10.11 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019), as amended by Amending Agreement between Francis Plat and Milestone Pharmaceuticals Inc. (incorporated herein by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on June 8, 2020).
- 10.12+ Employment Agreement, dated February 15, 2022 between David Bharucha, M.D., Ph.D. and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on February 16, 2022).
- 10.13+ Securities Purchase Agreement dated July 22, 2020 (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on July 23, 2020).
- 10.14+ Open Market Sale AgreementSM, dated July 29, 2020, by and between Milestone Pharmaceuticals Inc. and Jefferies LLC 2020 (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on July 29, 2020).
- 10.15+ Form of Indemnity Agreement (incorporated herein by reference to Exhibit 10.14 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
- 10.16+ Amended and Restated Employment Agreement between Lorenz Muller and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.12 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
- 10.17* License and Collaboration Agreement by and among the Company and Ji Xing Pharmaceuticals, Limited, dated May 15, 2021 (incorporated herein by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on August 11, 2021).
- 10.18 Consulting Agreement, between the Company and Francis Plat (incorporated herein by reference to Exhibit 10.18 to the Registrant's Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 29, 2023).
- 10.19+ Non-Employee Director Compensation Policy, as amended (incorporated herein by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on November 13, 2023).
- 10.20* Exchange Agreement, dated as of March 22, 2023, by and among the Company and certain investors party thereto (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 27, 2023).

10.21*◆	Royalty Purchase Agreement, dated as of March 27, 2023, by and among the Company and RTW (incorporated herein by reference to Exhibit 10.1 to the Registrant’s Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 31, 2023).
10.22*◆	Note Purchase Agreement, dated as of March 27, 2023, by and among the Company and RTW (incorporated herein by reference to Exhibit 10.2 to the Registrant’s Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 31, 2023).
10.23	First Amendment to Note Purchase Agreement, dated as of August 4, 2023 (incorporated herein by reference to Exhibit 10.1 to the Registrant’s Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on November 13, 2023).
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.
24.1	Power of Attorney (included on the signature page to this registration statement).
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002
32.1^	Certification of Principal Executive Officer and Principal Financial Officer pursuant to Rules 13a-14(b) and 15d-14(b) promulgated under the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, as adopted pursuant to section 906 of The Sarbanes-Oxley Act of 2002
97.1	Incentive Compensation Recoupment Policy.
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibit 101)

* Certain portions of this exhibit have been omitted pursuant to Item 601(b)(10) of Regulation S-K. The Registrant hereby undertakes to furnish to the SEC, upon request, copies of any such instruments.

◆ In accordance with Item 601(b)(10)(iv) of Regulation S-K, certain information (indicated by “[***]”) has been excluded from this exhibit.

+ Indicates a management contract or compensatory plan

^ These certifications are being furnished solely to accompany this Annual Report pursuant to 18 U.S.C. Section 1350, and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and are not to be incorporated by reference into any filing of the Registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

ITEM 16. FORM 10-K SUMMARY

Not applicable

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Company has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Milestone Pharmaceuticals Inc.

Dated: March 21, 2024

/s/ Joseph Oliveto

Joseph Oliveto
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Joseph Oliveto and Amit Hasija, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this report, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their, his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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 Company and in the capacities indicated on the 21st of March 2024.

/s/ Joseph Oliveto

Joseph Oliveto

Chief Executive Officer and Director
(principal executive officer)

/s/ Amit Hasija

Amit Hasija

Chief Financial Officer
(principal financial officer and principal accounting officer)

/s/ Robert J. Wills

Robert Wills

Chairman of the Board

/s/ Seth Fischer

Seth Fischer

Director

/s/ Lisa Giles

Lisa M. Giles

Director

/s/ Debra K. Liebert

Debra K. Liebert

Director

/s/ Richard Pasternak

Richard Pasternak

Director

/s/ Michael Tomsicek

Michael Tomsicek

Director

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

**FORM 10-K/A
(Amendment No. 1)**

(Mark One)

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

For the fiscal year ended December 31, 2023

OR

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

For the transition period from _____ to _____

Commission file number 001-38899

Milestone Pharmaceuticals Inc.

(Exact name of registrant as specified in its charter)

Québec
(State or Other Jurisdiction of Incorporation or Organization)

Not applicable
(I.R.S. Employer Identification No.)

1111 Dr. Frederik-Phillips Boulevard, Suite 420
Montréal, Québec CA
(Address of Principal Executive Offices)

H4M 2X6
(Zip Code)

Registrant's telephone number, including area code (514)-336-0444

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares	MIST	The Nasdaq Stock Market LLC

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

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

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

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

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

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

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

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes No

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

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

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

The aggregate market value (approximate) of the registrant's common equity held by non-affiliates based on the closing price of a share of the registrant's common share for The Nasdaq Stock Market on June 30, 2023 (the last business day of the registrant's most recently completed second fiscal quarter) was \$95.9 million.

As of March 21st, 2024, the total number of shares outstanding of the registrant's Common Shares was 53,149,778 shares, net of treasury shares.

Auditor Name
PricewaterhouseCoopers LLP

Auditor Location
Montreal, Canada

Auditor firm ID
271

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“Milestone Pharmaceuticals” and the Milestone logo appearing in this Amendment No. 1 to the Annual Report on Form 10-K are unregistered trademarks of Milestone Pharmaceuticals Inc. All other trademarks, trade names and service marks appearing in this Amendment No. 1 to the Annual Report on Form 10-K are the property of their respective owners. Solely for convenience, the trademarks and trade names in this Amendment No. 1 to the Annual Report on Form 10-K may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert their rights thereto.

This Amendment No. 1 to the Annual Report on Form 10-K contains references to United States dollars and Canadian dollars. All dollar amounts referenced, unless otherwise indicated, are expressed in United States dollars. References to “\$” are to United States dollars and references to “C\$” are to Canadian dollars.

EXPLANATORY NOTE

The purpose of this Amendment No. 1 on Form 10-K/A to the Annual Report on Form 10-K (the “Amendment”) is to amend and restate Part III, Items 10 through 14 of the previously filed Annual Report on Form 10-K of Milestone Pharmaceuticals Inc. (the “Company”) for the year ended December 31, 2023 (the “Form 10-K”), filed with the Securities and Exchange Commission on March 21, 2024, to include information previously omitted in reliance on General Instruction G(3) to Form 10-K, which provides that registrants may incorporate by reference certain information from a definitive proxy statement prepared in connection with the election of directors within 120 days after the fiscal year end. The Company has determined to include such Part III information by amendment of the Annual Report on Form 10-K rather than incorporation by reference to the proxy statement. Accordingly, Part III is hereby amended and restated as set forth below. In addition, this Amendment deletes the reference on the cover of the Form 10-K to the incorporation by reference of portions of our proxy statement into Part III of the Form 10-K.

As a result of this Amendment, the Company is also filing the certifications required under Section 302 of the Sarbanes-Oxley Act of 2002 as exhibits to this Amendment. Because no financial statements have been included in this Amendment and this Amendment does not contain or amend any disclosure with respect to Items 307 and 308 of Regulation S-K, paragraphs 3, 4 and 5 of the certifications have been omitted, as required by Question 161.01 of the Compliance and Disclosure Interpretations of the Division of Corporation Finance of the SEC.

Except as described above, no other changes have been made to the Annual Report on Form 10-K and this Amendment does not reflect events occurring after the filing of the Form 10-K and no attempt has been made in this Amendment to modify or update other disclosures as presented in the Form 10-K.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information About our Directors

The following table sets forth the names and ages, as of April 29, 2024, of each member of our board of directors (the “Board”), and the subsequent narrative provides details about each of the Director nominees’ background and experience.

NAME	AGE	POSITION(S)	DIRECTOR SINCE	RESIDENCE
Robert J. Wills	70	Director and Chair of the Board	October 2020	New Jersey (USA)
Seth H.Z. Fischer	68	Director	March 2023	New Jersey (USA)
Lisa M. Giles	65	Director	October 2020	South Carolina (USA)
Debra K. Liebert	68	Director	June 2015	California (USA)
Joseph Oliveto	57	President, Chief Executive Officer and Director	July 2017	North Carolina (USA)
Richard Pasternak	75	Director	November 2019	New York (USA)
Michael Tomsicek	58	Director	April 2019	Wisconsin (USA)

Robert J. Wills has served as a member of our board since October 2020. He has over 35 years of extensive and significant experience in the pharmaceutical industry, including preclinical and clinical research and development, business development and strategic partnering. Dr. Wills served in a variety of executive roles for Johnson & Johnson (“J&J”) a medical device, pharmaceutical and consumer goods manufacturing company, from December 1989 to February 2015 and recently served as Vice President, Alliance Manager where he was responsible for managing strategic alliances for J&J’s Pharmaceutical Group worldwide since 2002. Prior to this, Dr. Wills spent 22 years in pharmaceutical drug development, 12 of which were at J&J and 10 of which were at Hoffmann-La Roche Inc. Before assuming his role as Vice President, Alliance Manager at J&J, Dr. Wills served as Senior Vice President Global Development at J&J where he was responsible for its late stage development pipeline and was a member of several internal commercial and research and development operating boards. Dr. Wills has served on the board of directors of Oncernal Therapeutics, Inc. (NASDAQ: ONCT) since June 2019, Parion Sciences, Inc. since December 2015, Feldan Therapeutics since June 2020 and Go Therapeutics, Inc. since October 2017. Dr. Wills was previously the chairman of the board of directors of CymaBay Therapeutics, Inc. from October 2015 up until the acquisition by Gilead Sciences in March 2024, and a member of the board of directors of GTX, Inc., where he served as Executive Chairman from March 2015 through June 2019. Dr. Wills holds a B.S. in Biochemistry and a M.S. in Pharmaceutics from the University of Wisconsin and a Ph.D. in Pharmaceutics from the University of Texas. We believe Dr. Wills management and industry experience, including his public company board member experience, qualifies him to serve on our Board.

Seth H.Z. Fischer has served as a member of our board since March 2023. Mr. Fischer currently serves as a member of the board of directors of Agile Therapeutics, Inc. (AGRX), Marinus Pharmaceuticals, Inc., (MRNS), and Esperion Therapeutics, Inc. (ESPR). Previously, Mr. Fischer served as the Chief Executive Officer and as a Director of Vivus, Inc., a publicly traded biopharmaceutical company commercializing and developing innovative, next-generation therapies to address unmet needs in obesity, diabetes, sleep apnea and sexual health from September 2013 to December 2017. Prior to Vivus, Mr. Fischer served in various positions of increasing responsibility at Johnson & Johnson, most recently as Company Group Chairman, Johnson & Johnson and Worldwide Franchise Chairman of Cordis Corporation. Prior to that, he served as Company Group Chairman, North America Pharmaceuticals, which included responsibilities for Ortho-McNeil Pharmaceuticals, Janssen and Scios. Prior to that, Mr. Fischer served as President of Ortho-McNeil Pharmaceuticals. Mr. Fischer’s operating responsibilities encompassed the commercialization of products in multiple therapeutic categories including epilepsy, migraines, neurologic, analgesic, anti-infective, cardiovascular, psychiatric and women’s health areas. From May 2013 to May 2019, Mr. Fischer also served on the Board of Directors of BioSig Technologies, Inc. Mr. Fischer earned a bachelor’s degree in general studies from Ohio University and served as a captain in the U.S. Air Force. We believe Mr. Fischer’s management and industry experience, including his experience in public company management, qualifies him to serve on our Board.

Lisa M. Giles has served as a member of our board since October 2020. She has over 35 years of extensive and significant experience in the pharmaceutical, diagnostic, and device industries, including enterprise strategic planning, portfolio prioritization, development and commercial launch planning, and business development. She has served as the managing director and Chief Executive Officer of Giles & Associates Consultancy, Inc. (GAC) since she founded it in 2000. In addition to serving as an independent Director for Milestone Pharmaceuticals since 2020, she also serves on the Board of HCW Biologics (Nasdaq: HCWB) since 2021, and Northwestern Memorial Foundation's Board since 2013. She also previously served as a member of the Board of Directors for three other companies: GenMark Diagnostics, Inc. (Nasdaq: GNMK) from 2015 to 2021 upon the sale to Roche; Durata Therapeutics, Inc. (Nasdaq: DRTX) from 2012 to 2014, and Intranasal Therapeutics, Inc. from 2005 to 2006. Ms. Giles has also been the CEO of Optivara, Inc. a software as a service (SaaS) company serving the life sciences industry from 2013 to 2019. Prior to founding GAC, Ms. Giles was the Vice President of Strategy Development at G.D. Searle Pharmaceuticals, a division of Monsanto; a Partner with Business Strategy Consulting, LLC; and held various leadership roles with Abbott Laboratories (NYSE: ABT). Ms. Giles received her B.S. in economics from Juniata College, and completed executive management programs at Stanford University and the University of Chicago. We believe Ms. Giles' management and industry experience, including her public company board member experience, qualifies her to serve on our Board.

Debra K. Liebert has served as a member of our Board since June 2015. Ms. Liebert served as a Principal of Domain Associates, LLC, a healthcare venture capital firm with an exclusive focus on life sciences, from 2007 to December 2013, and as a Managing Director from January 2014 to December 2019. Currently, Ms. Liebert is an independent consultant to biopharma companies and serves as Chair on Board of Directors of Mispro Biotech Services and as Chief Development Officer for Transposon Therapeutics, Inc. Previously, Ms. Liebert served in various positions at CancerVax Corporation, Atairgin Technologies and Trega Biosciences. Ms. Liebert received her B.S. degree in chemistry from Clarion University, her M.S. degree in pharmacology/toxicology from Duquesne University, and her M.B.A degree from University of California, Los Angeles. We believe that Ms. Liebert's over 40 years of scientific, strategic and management experience in the healthcare industry qualifies her to serve on our Board.

Joseph Oliveto has served as our President and Chief Executive Officer since March 2017 and as a member of our Board since July 2017. Prior to becoming our President and Chief Executive Officer, Mr. Oliveto served as a consultant to the company from 2016 to March 2017. Mr. Oliveto served as Chief Executive Officer at Galleon Pharmaceuticals, Inc. from July 2015 to June 2016. From June 2008 to June 2014, Mr. Oliveto was at Chelsea Therapeutics International, Ltd., where he held various roles, including those serving as President and Chief Executive Officer and a member of the board of directors from January 2014 to June 2014, overseeing the company's sale to Lundbeck, Inc., following which he served as an Executive Advisor from July 2014 to July 2015. Mr. Oliveto received his B.A. degree in Chemistry and his M.B.A. degree from Rutgers University. We believe that Mr. Oliveto's significant experience in the areas of drug development, commercialization and manufacturing as well as business development, qualifies him to serve on our Board.

Richard Pasternak, MD has served as a member of our Board since November 2019. He retired as a Clinical Professor at the Weill Cornell Medical College. In 2019, Dr. Pasternak retired from Cerenis Therapeutics (now ABIONYX Pharma), a French publicly-traded company focused on developing treatments for cardiovascular diseases, where he served since 2011, most recently as Chief Executive Officer and Chair of the Board of Directors. He previously served as Vice President, Head of Cardiovascular Clinical Research, and Head of Global Scientific Affairs and Scientific Leadership, at Merck & Co. from 2004 to 2010. Prior to joining Merck & Co., he was the Director of Preventive Cardiology and Cardiac Rehabilitation at Massachusetts General Hospital, and an Associate Professor of Medicine at Harvard Medical School. Dr. Pasternak also serves on the Board of Anthos Therapeutics. He previously served on the Boards of Essentialis Therapeutics, Magenta Medical LTD, and Haptocure Ltd., as well as several nonprofit organizations. He was also previously a senior advisor to Bay City Capital and Bridge Medicines. Dr. Pasternak received his BA and MD from Yale University and completed his medical and cardiology training at Massachusetts General Hospital. We believe Dr. Pasternak's clinical, industry and management experience, including his experience serving on public company boards of directors, qualifies him to serve on our Board.

Michael Tomsicek has served as a member of our Board since April 2019. Mr. Tomsicek served as the Chief Financial Officer of CRISPR Therapeutics AG, a Nasdaq-listed gene editing company, from November 2017 through October 2021. Prior to that, Mr. Tomsicek served as Chief Financial Officer of Abiomed, a Nasdaq-listed medical device company, from July 2015 to August 2017. Before that, he was Chief Financial Officer at Cubist Pharmaceuticals, Inc., a Nasdaq-listed biopharmaceutical company. He was at Cubist from August 2010 to January 2015, through the company's sale to Merck, and held a series of roles of increasing responsibility leading finance, investor relations and strategic sourcing. Prior to Cubist, Mike spent nearly eight years at General Electric Healthcare, ultimately as Chief Financial Officer of the global ultrasound business. Mike holds an M.B.A. and a B.S. in Engineering, both from the University of Wisconsin. We believe Mr. Tomsicek's management and industry experience, including his public company management experience, qualifies him to serve on our Board.

Information About our Executive Officers

The following table sets forth information regarding our executive officers, including their ages as of April 29, 2024:

<u>NAME</u>	<u>AGE</u>	<u>POSITION(S)</u>
Joseph Oliveto	57	President, Chief Executive Officer and Director
David Bharucha	62	Chief Medical Officer
Amit Hasija	51	Chief Financial Officer and Executive Vice President of Corporate Development
Lorenz Muller	60	Chief Commercial Officer
Jeffrey Nelson	43	Chief Operating Officer

Joseph Oliveto has served as our President and Chief Executive Officer since March 2017 and as a member of our Board since July 2017. Prior to becoming our President and Chief Executive Officer, Mr. Oliveto served as a consultant to the company from 2016 to March 2017. Mr. Oliveto served as Chief Executive Officer at Galleon Pharmaceuticals, Inc. from July 2015 to June 2016. From June 2008 to June 2014, Mr. Oliveto was at Chelsea Therapeutics International, Ltd., where he held various roles, including serving as President and Chief Executive Officer and a member of the board of directors from January 2014 to June 2014, overseeing the company's sale to Lundbeck, Inc., following which he served as an Executive Advisor from July 2014 to July 2015. Mr. Oliveto received his B.A. degree in Chemistry and his M.B.A. degree from Rutgers University. We believe that Mr. Oliveto's significant experience in the areas of drug development, commercialization and manufacturing as well as business development, qualifies him to serve on our Board.

David Bharucha has served as our Chief Medical Officer since February 2022. Prior to becoming our Chief Medical Officer, Dr. Bharucha was with Allergan (a division of AbbVie as of 2020), where he held various roles, including serving as Vice President, R&D, Clinical Development Section Head from 2018 to 2021, as Associate Vice-President R&D, Clinical Development, Section Head from 2017 to 2018, and as Senior Director, Branded R&D Clinical Development from 2015 to 2016. His leadership positions included membership and chairing early- and late-stage research and development governance boards and serving on joint development committees with partner companies. Dr. Bharucha received his B.A. (Honors) degree in Biology from Haverford College, his Ph.D. degree in Biochemistry/Molecular Biology from the University of Chicago and his M.D. (Honors) degree from the University of Chicago, Pritzker School of Medicine. Dr. Bharucha became triple board-certified in Internal Medicine, Cardiovascular Disease, and Clinical Cardiac Electrophysiology, and served on the faculty of major medical centers.

Amit Hasija has served as our Chief Financial Officer and Executive Vice President of Corporate Development, since September 2019. Prior to Milestone Pharmaceuticals, Mr. Hasija served as Chief Financial Officer and Chief Business Officer at Fulcrum Therapeutics. Prior to Fulcrum, he spent five years at Sanofi, most recently serving as Vice President of Integrated Care. At Sanofi, he also served as Vice President of North America Pharmaceutical Business Development. Prior to joining Sanofi over approximately 10 years, Mr. Hasija held positions in investment banking at Credit Suisse, Goldman Sachs and Deutsche Bank. He began his career at Merck. Mr. Hasija received a BS in Chemical Engineering from Drexel University and an MBA from New York University's Stern School of Business.

Lorenz Muller has served as our Chief Commercial Officer since October 2017. Prior to joining our company, Mr. Muller served as the Vice President of Marketing at Exact Sciences Corporation, a molecular diagnostics company, from June 2016 through July 2017. Prior to that, Mr. Muller served as the Executive Director, Thrombosis at Daiichi Sankyo, Inc. from July 2008 through December 2015. Mr. Muller received his B.S. degrees in Chemical Engineering and Life Sciences and his M.S. degree in Chemical Engineering from the Massachusetts Institute of Technology. He received his MBA from the Harvard Graduate School of Business Administration.

Jeffrey Nelson has served as Milestone's Chief Operating Officer since June 2020. He previously served as Milestone's Vice President, Project Management from August 2018 until June 2020. Prior to that, Mr. Nelson was Vice President Program Management at Mateon Therapeutics, Inc. (now Oncotelic Therapeutics, Inc.), which was an oncology-focused biotech company, from September 2015 until November 2017. Mr. Nelson holds a BA in Economics from Brandeis University.

Board Composition

Our Board currently consists of seven members. The Company's articles provide that the number of directors shall be a minimum of three and a maximum of 15 members, which number will be determined from time to time by resolution of the Board in accordance with the Bylaws. Members of our Board are elected at each annual meeting of our shareholders and serve until their successors are elected or appointed, unless their office is vacated earlier. The term of office for each of the directors will expire at the time of our next annual shareholder's meeting.

Director Independence

Under the Nasdaq Stock Market LLC ("Nasdaq") Marketplace Rules (the "Nasdaq Listing Rules"), independent directors must comprise a majority of our Board as a public company within one year of listing.

Our Board has undertaken a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our Board has determined that all of our directors except Joseph Oliveto do not have any relationships that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the applicable rules and regulations of the SEC, the listing requirements of the Nasdaq Listing Rules, and National Instrument 52-110 "Audit Committees". Our Board has determined that Joseph Oliveto, by virtue of his employment with us, is not independent under applicable rules and regulations of the SEC and the Nasdaq Listing Rules. In making this determination, our Board considered the current and prior relationships that each non-employee director has with our Company and all other facts and circumstances our Board deemed relevant in determining their independence, including the beneficial ownership of our share capital by each non-employee director.

Family Relationships and Other Arrangements

There are no family relationships among our directors and executive officers. Debra K. Liebert was designated as a director to our Board by Domain Partners VIII, L.P., in connection with a shareholders agreement, which terminated in connection with our initial public offering.

Audit Committee

We have a standing Audit committee comprised of Lisa M. Giles, Robert Wills and Michael Tomsicek. Our Board has determined that all members of the Audit Committee are financially literate and are independent under the Nasdaq Listing Rules and Rule 10A-3(b)(1) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The chair of our Audit Committee is Michael Tomsicek. Our Board has determined that Mr. Tomsicek is an "audit committee financial expert" as such term is currently defined in Item 407(d)(5) of Regulations S-K. Our Board has also determined that each member of our Audit Committee can read and understand fundamental financial statements, in accordance with applicable requirements. In arriving at these determinations, the Board has examined each Audit Committee member's scope of experience and the nature of their employment in the corporate finance sector.

Board Mandate

The Board is responsible for the overall stewardship of the Company and its business, including supervising the management of the Company's business and affairs. The Board discharges this responsibility directly and through delegation of specific responsibilities to committees of the Board and to our officers. Under the Mandate of the Board (the "Board Mandate"), the Board has established committees to assist with its responsibilities. Our current standing Board committees are (i) the Audit Committee, (ii) the Compensation Committee, (iii) the Nominating and Corporate Governance Committee and (iv) the Clinical Affairs Committee.

Under the Board Mandate, the Board is responsible for, among other things, the following corporate governance-related matters: (i) overseeing the Company's performance and the quality, depth and continuity of management needed to meet the Company's strategic objectives; (ii) developing and approving the Company's approach to and practices regarding corporate governance; (iii) succession planning; (iv) overseeing orientation and education programs for new Directors and ongoing education opportunities for continuing Directors; (v) reviewing, discussing and approving the Company's strategic planning and organizational structure and supervising management to oversee that the strategic planning and organizational structure preserve and enhance the business of the Company and the Company's underlying value; (vi) approving and assessing compliance with all significant policies and procedures by which the Company is operating, including the Company's Code of Business Conduct and Ethics (as described below); (vii) reviewing the Company's principal risks and assessing whether appropriate systems are in place to manage such risks; and (viii) ensuring the integrity and adequacy of the Company's internal controls.

Descriptions of Key Positions

The Board determines the delineation of roles and responsibilities for key management and board committee positions. The general duties of the Chief Executive Officer and of the Board Chair are set forth in the Bylaws, which were filed on SEDAR+ at www.sedarplus.com on May 14, 2019. The chairs of each of the Audit Committee, the Compensation Committee, and the Nominating and Corporate Governance Committee, respectively, have authority, among other things, to call and preside over committee meetings, to set meeting agendas and to determine materials to be distributed to such committee.

Director Nominations

No material changes have been made to the procedures by which shareholders may recommend nominees to our Board.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to all of our directors, officers and employees, including our principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions, and agents and representatives. The Nominating and Corporate Governance Committee of our Board is responsible for monitoring compliance with our code of business conduct and ethics and any waivers applicable to any director, executive officer or employee. The full text of our Code of Conduct is posted on our website at investors.milestonepharma.com. We intend to disclose future amendments to certain provisions of our code of business conduct and ethics, or waivers of such provisions applicable to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer, or persons performing similar functions, and agents and representatives, on our website identified above.

In addition, under the *Civil Code of Québec*, to which we are subject as a legal person existing under the QBCA, and under the QBCA, a director must immediately disclose to the board any situation that may place him or her in a conflict of interest. Any such declaration of interest is recorded in the minutes of proceeding of the board of directors. The director abstains, except if required, from the discussion and voting on the question. In addition, it is our policy that an interested director recuse himself or herself from the decision-making process pertaining to a contract or transaction in which he or she has an interest. To the Company's knowledge, since January 1, 2022, no conduct of any director or executive officer of the Company has constituted a departure from the Code of Business Conduct and Ethics.

Corporate Governance Guidelines

The Board has adopted Corporate Governance Guidelines to assure that the Board will have the necessary authority and practices in place to review and evaluate our business operations as needed and to make decisions that are independent of our management. The guidelines are also intended to align the interests of Directors and management with those of our shareholders. The Corporate Governance Guidelines set forth the practices the Board intends to follow with respect to board composition and selection, board meetings and involvement of senior management, Chief Executive Officer performance evaluation and succession planning, and board committees and compensation.

Insider Trading Policy

We maintain an Insider Trading Policy that, among other things, prohibits all of our directors, employees and consultants, including our named executive officers, from engaging in short sales, hedging of our share ownership positions and transactions involving derivative securities relating to our capital stock. Our Insider Trading Policy also prohibits trading without the prior approval of our Clearing Officer. Further, subject to the provisions of the Insider Trading Policy, we permit our directors and certain employees, including our named executive officers, to adopt the Exchange Act Rule 10b5-1 trading plans (“10b5-1 plans”). Under our Insider Trading Policy, 10b5-1 plans may only be adopted or modified with the approval of our Clearing Officer under our Insider Trading Policy and only when such individual does not otherwise possess material nonpublic information about the Company.

ITEM 11. EXECUTIVE COMPENSATION.

Executive Officer Compensation

Our named executive officers for the year ended December 31, 2023, which consist of our principal executive officer and our next two most highly compensated executive officers who were serving as executive officers at the end of 2023 are:

- Joseph Oliveto;
- Amit Hasija; and
- David Bharucha.

Summary Compensation Table

The following table provides information regarding the compensation provided to our named executive officers for the years ended December 31, 2023 and 2022.

NAME AND PRINCIPAL POSITION	YEAR	SALARY (\$)(1)	OPTION AWARDS (\$)(2)	NON-EQUITY INCENTIVE PLAN COMPENSATION (\$)(3)	ALL OTHER COMPENSATION (\$)	TOTAL (\$)
Joseph Oliveto	2023	601,520	1,028,621	292,000	55,951(4)	1,978,092
<i>Chief Executive Officer</i>	2022	584,000	2,060,115	266,255	55,457(5)	2,965,827
David Bharucha	2023	458,350	528,597	190,460	42,624(6)	1,220,031
<i>Chief Medical Officer</i>	2022	391,087	1,608,794	—	18,390(7)	2,018,181
Amit Hasija	2023	437,750	371,447	148,750	48,390(8)	1,006,337
<i>Chief Financial Officer and Executive Vice President of Corporate Development</i>	2022	425,000	721,398	135,548	42,633(9)	1,324,579

- (1) Salary amounts represent actual amounts paid during 2023 and 2022, except as otherwise noted. See “—Narrative to the Summary Compensation Table—Annual Base Salary” below.
- (2) In accordance with SEC rules, this column reflects the aggregate grant date fair value of the option awards granted during fiscal years 2023 and 2022 computed in accordance with ASC 718 for share-based compensation transactions. Assumptions used in the calculation of these amounts are included in Note 9 to our audited consolidated financial statements included in our Annual Report on Form 10-K. These amounts do not reflect the actual economic value that will be realized by the named executive officer upon the vesting of the share options, the exercise of the share options, or the sale of the common shares underlying such share options.
- (3) Reflects performance-based cash bonuses awarded to our named executive officers. See “—Narrative to the Summary Compensation Table—Non Equity Incentive Plan Compensation” below for a description of the material terms pursuant to which this compensation was awarded.
- (4) Includes (i) \$38,654 in Company contributions to Mr. Oliveto’s 401(k) and (ii) \$17,296 in Company contributions to Mr. Oliveto’s life insurance premiums.
- (5) Includes (i) \$38,134 in Company contributions to Mr. Oliveto’s 401(k) and (ii) \$17,322 in Company contributions to Mr. Oliveto’s life insurance premiums.
- (6) Includes (i) \$38,532 in Company contributions to Dr. Bharucha’s 401(k) and (ii) \$4,092 in Company contributions to Dr. Bharucha’s life insurance premiums.

- (7) Includes (i) \$14,879 in Company contributions to Dr. Bharucha's 401(k) and (ii) \$3,511 in Company contributions to Dr. Bharucha's life insurance premiums.
- (8) Includes (i) \$38,752 in Company contributions to Mr. Hasija's 401(k) and (ii) \$9,638 in Company contributions to Mr. Hasija's life insurance premiums.
- (9) Includes (i) \$33,187 in Company contributions to Mr. Hasija's 401(k) and (ii) \$9,447 in Company contributions to Mr. Hasija's life insurance premiums.

Narrative to the Summary Compensation Table

Our Board reviews compensation annually for all employees, including our named executive officers. In setting executive base salaries and bonuses and granting equity incentive awards, we consider compensation for comparable positions in the market, the historical compensation levels of our executives, individual performance as compared to our expectations and objectives, our desire to motivate our employees to achieve short- and long-term results that are in the best interests of our shareholders and a long-term commitment to our Company.

Either our Board or the Compensation Committee has historically determined our executive officers' compensation and has typically reviewed and discussed management's proposed compensation with our chief executive officer for all executives other than our chief executive officer. Based on those discussions and its discretion, the Compensation Committee and our full Board then approved the compensation of each executive officer. Following the completion of our initial public offering in May 2019, the Compensation Committee determined our executive officers' compensation and followed this process, and the Compensation Committee itself, rather than our Board, approves the compensation of each executive officer other than our Chief Executive Officer.

Annual Base Salary

Base salaries for our executive officers are initially established through arm's-length negotiations at the time of the executive officer's hiring, taking into account such executive officer's qualifications, experience, the scope of his or her responsibilities and competitive market compensation paid by other companies for similar positions within the industry and geography. Base salaries are reviewed annually, typically in connection with our annual performance review process, and adjusted from time to time to realign salaries with market levels after taking into account individual responsibilities, performance and experience. For 2022, the base salaries of Mr. Oliveto, Mr. Hasija, and Dr. Bharucha were \$584,000, \$425,000, and \$391,087, respectively, and for 2023, the base salaries of Mr. Oliveto, Mr. Hasija, and Dr. Bharucha were \$601,520, \$437,750, and \$458,350, respectively. In making decisions regarding salary increases, we may also draw upon the experience of members of our Board with executives at other companies.

Non-Equity Incentive Plan Compensation

In accordance with the terms of their employment agreements, as amended, our named executive officers are eligible to receive discretionary annual bonuses of up to a percentage of each executive's gross base salary based on individual performance, Company performance or as otherwise determined appropriate, as determined by our Board. The target bonus percentages for each of Mr. Oliveto, Mr. Hasija and Dr. Bharucha in 2022 and 2023, as applicable, were: Mr. Oliveto, 50%; Mr. Hasija, 35% and Dr. Bharucha, 40%.

Equity-Based Incentive Awards

Our equity-based incentive awards are designed to align our interests and those of our shareholders with those of our employees and consultants, including our executive officers. The Board and the Compensation Committee are responsible for approving equity grants. As of the date hereof, share option awards were the only form of equity awards we have granted to any of our executive officers.

We have historically used share options as an incentive for long-term compensation to our executive officers because the share options allow our executive officers to profit from this form of equity compensation only if our share price increases relative to the share option's exercise price, which exercise price is set at the fair market value of our common shares on the date of grant. We may grant equity awards at such times as our Board determines appropriate. In addition, in connection with our initial public offering in May 2019, our Board delegated certain authority to our Compensation Committee to grant equity awards. Our executives generally are awarded an initial grant in the form of a share option in connection with their commencement of employment with us. Additional grants may occur periodically in order to specifically incentivize executives with respect to achieving certain corporate goals or to reward executives for exceptional performance.

Prior to our initial public offering in May 2019, we granted all share options pursuant to our Stock Option Plan (the “2011 Plan”). Following our initial public offering, we have granted equity incentive awards under the terms of the 2019 Equity Incentive Plan (the “2019 Plan”). The terms of our equity plans are described below under “—Equity Incentive Plans.”

All options are granted with an exercise price per share that is no less than the fair market value of our common shares on the date of grant of such award. Our share option awards generally vest over a four-year period and may be subject to acceleration of vesting and exercisability under certain termination and change in control events. See “—Outstanding Equity Awards at Fiscal Year-End.”

Outstanding Equity Awards at Fiscal Year-End

The following table provides information regarding the outstanding equity awards held by our named executive officers as of December 31, 2023. Prior to our initial public offering in May 2019, we granted all share options pursuant to the 2011 Plan. Following our initial public offering, we have granted equity incentive awards under the terms of the 2019 Plan, except as otherwise noted.

NAME AND PRINCIPAL POSITION	GRANT DATE	VESTING COMMENCEMENT DATE	OPTION AWARDS			
			NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS (#) (EXERCISABLE)	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS (#) (UNEXERCISABLE)	OPTION EXERCISE PRICE (\$)	OPTION EXPIRATION DATE
Joseph Oliveto	10/27/2016	9/19/2016	121,574	—	1.12	9/19/2026
<i>Chief Executive Officer</i>	1/3/2017	9/19/2016	8,960	—	1.12	1/3/2027
	12/12/2017	9/19/2016	108,491	—	1.54	9/19/2027
	12/12/2017	10/19/2016	5,365	—	1.54	9/19/2027
	10/26/2018	9/19/2016	11,970	—	2.66	10/25/2028
	10/26/2018	9/19/2016	179,509	—	2.66	10/25/2028
	11/21/2018	1/21/2020	75,196	—	2.66	11/21/2028
	11/21/2018	11/21/2018	187,996	—	2.66	11/21/2028
	6/5/2020(2)	6/5/2020	150,000	—	3.74	6/5/2030
	3/24/2021(2)	1/24/2022	1	17,650(1)	6.26	3/24/2031
	3/24/2021(2)	3/24/2021	460,624	191,725(1)	6.26	3/24/2031
	3/21/2022(2)	1/21/2025	—	18,315(1)	5.46	3/21/2032
	3/21/2022(2)	3/21/2022	218,750	262,935(1)	5.46	3/21/2032
	2/16/2023(2)	2/16/2023	—	360,000(1)	3.59	2/16/2033
Amit Hasija	6/5/2020(2)	6/5/2020	115,000	—	3.74	6/5/2030
<i>Chief Financial Officer and Executive Vice President of Corporate Development</i>	3/24/2021(2)	3/24/2021	2	25,113(1)	6.26	3/24/2031
	3/24/2021(2)	3/24/2021	164,998	49,887(1)	6.26	3/24/2031
	3/21/2022(2)	1/21/2024	—	12,054(1)	5.46	3/21/2032
	3/21/2022(2)	3/21/2022	76,562	86,384(1)	5.46	3/21/2032
	2/16/2023(2)	2/16/2023	—	130,000(1)	3.59	2/16/2033
David Bharucha	2/15/2022(3)	2/15/2022	151,250	178,750(1)	6.47	2/15/2032
<i>Chief Medical Officer</i>	2/16/2023(2)	2/16/2023	—	185,000(1)	3.59	2/16/2033

- (1) The common shares underlying the options vest as to 25% on the first anniversary of the vesting commencement date, and the remaining shares vest in 36 equal monthly installments thereafter, subject to the named executive officer's continued service through each vesting date.
- (2) Granted pursuant to the terms of our 2019 Plan.
- (3) Granted outside of our 2019 Plan.

Employment Arrangements

We have entered into employment agreements with each of our named executive officers. The agreements set forth the named executive officer's initial base salary, bonus potential, eligibility for employee benefits and severance benefits upon a qualifying termination of employment, subject to certain non-solicitation and non-competition provisions. Any potential payments and benefits due upon a qualifying termination of employment or a change in control are further described below under "—Potential Payments and Benefits upon Termination or Change in Control."

Agreement with Joseph Oliveto

We entered into an employment agreement with Mr. Oliveto, our President and Chief Executive Officer, in March 2017 that governed the terms of his employment with us prior to April 2019. Pursuant to his prior agreement, Mr. Oliveto was entitled to an annual base salary of \$360,000, was eligible to receive an annual target performance bonus of up to 50% of his gross base salary, and was granted options to purchase up to an aggregate of 252,853 common shares.

In April 2019 in connection with our initial public offering, we entered into an amended and restated employment agreement with Mr. Oliveto that governed the terms of his employment with us prior to June 2020. Pursuant to his amended and restated agreement, Mr. Oliveto was entitled to an annual base salary of \$500,000 and is eligible to receive an annual target performance bonus of 50% of his gross base salary.

Under the terms of his agreement, as further amended in June 2020, Mr. Oliveto is eligible to receive an annual target performance bonus of 50% of the greater of his gross base salary and \$550,000.

For 2022, Mr. Oliveto's annual base salary was \$584,000 and target annual performance bonus was 50% of his annual base salary, as determined by the Board in its sole discretion. In February 2023, the Compensation Committee approved, effective January 1, 2023, a merit increase to Mr. Oliveto's base salary to \$601,520 and an annual target bonus of 50% of his gross base salary.

For 2023, Mr. Oliveto's annual base salary was \$601,520 and target annual performance bonus was 50% of his annual base salary, as determined by the Board in its sole discretion. In March 2024, the Compensation Committee decided not to provide a merit increase to Mr. Oliveto's base salary for the fiscal year ended December 31, 2024. Mr. Oliveto has an annual target bonus of 50% of his gross base salary for the fiscal year ended December 31, 2024.

Agreement with Amit Hasija

We entered into an employment agreement with Mr. Hasija, our Chief Financial Officer and Executive Vice President of Corporate Development, in September 2019 that governed the terms of his employment with us prior to June 2020. Pursuant to his agreement, Mr. Hasija was entitled to an annual base salary of \$390,000, was eligible to receive an annual target performance bonus of 35% of his gross base salary, and was granted an option to purchase up to 147,000 common shares.

Under the terms of his agreement, as further amended in June 2020, Mr. Hasija is eligible to receive an annual target performance bonus of 35% of the greater of his gross base salary and \$400,000 and he received a retention bonus of \$80,000 as his employment continued through June 1, 2021 or if he is terminated prior to such date without cause. In addition, Mr. Hasija received an additional retention bonus of \$20,000 as his employment continued through December 31, 2021. We also granted Mr. Hasija options to purchase up to an aggregate of 115,000 common shares in connection with the execution of his employment agreement amendment.

For 2022, Mr. Hasija's annual base salary was \$425,000 and target annual performance bonus was 35% of his annual base salary, as determined by the Board in its sole discretion. In February 2023, the Compensation Committee approved, effective January 1, 2023, a merit increase to Mr. Hasija's base salary to \$437,750 and an annual target bonus of 35% of his gross base salary.

For 2023, Mr. Hasija's annual base salary was \$437,750 and target annual performance bonus was 35% of his annual base salary, as determined by the Board in its sole discretion. In March 2024, the Compensation Committee decided not to provide a merit increase to Mr. Hasija's base salary for the fiscal year ended December 31, 2024. Mr. Hasija has an annual target bonus of 35% of his gross base salary for the fiscal year ended December 31, 2024.

Agreement with David Bharucha

We entered into an employment agreement with Dr. Bharucha, our Chief Medical Officer, in February 2022. Pursuant to his agreement, Dr. Bharucha was entitled to an annual base salary of \$445,000, was eligible to receive an annual target performance bonus of 40% of his gross base salary, and was granted an option to purchase up to 330,000 common shares.

For 2022, Dr. Bharucha's annual base salary was \$445,000 and target annual performance bonus was 40% of his annual base salary, as determined by the Board in its sole discretion. In February 2023, the Compensation Committee approved, effective January 1, 2023, a merit increase to Dr. Bharucha's base salary to \$458,350 and an annual target bonus of 40% of his gross base salary.

For 2023, Mr. Bharucha's annual base salary was \$458,350 and target annual performance bonus was 40% of his annual base salary, as determined by the Board in its sole discretion. In March 2024, the Compensation Committee decided not to provide a merit increase to Mr. Bharucha's base salary for the fiscal year ended December 31, 2024. Mr. Bharucha has an annual target bonus of 40% of his gross base salary for the fiscal year ended December 31, 2024.

Potential Payments and Benefits upon Termination or Change in Control

Regardless of the manner in which a named executive officer's employment with us terminates, the named executive officer is entitled to receive amounts earned during his term of service, including salary and accrued unused vacation pay. In addition, each of our named executive officers is eligible to receive certain benefits pursuant to his employment agreement with us as follows:

Joseph Oliveto

Under his amended and restated employment agreement, if Mr. Oliveto is terminated by us without cause or if Mr. Oliveto resigns for good reason, he is entitled to salary continuation and reimbursement of premiums to continue health care benefits for a period of 12 months, subject to his execution of a general release in favor of the Company. If Mr. Oliveto is terminated without cause or resigns for good reason within 30 days prior to, or 12 months following, a change in control, he is entitled to receive (i) salary continuation and reimbursement of premiums to continue health care benefits for a period of 18 months, (ii) a one-time bonus equal to one and a half times his target bonus for the year in which he is terminated and (iii) accelerated vesting of any outstanding and unvested share options, subject in the case of the foregoing clauses (i) and (ii), to his execution of a general release in favor of our Company.

Amit Hasija

Under his employment agreement, if Mr. Hasija is terminated by us without cause or if Mr. Hasija resigns for good reason, he is entitled to salary continuation and reimbursement of premiums to continue health care benefits for a period of nine months, subject to his execution of a general release in favor of our Company. If Mr. Hasija is terminated without cause or resigns for good reason within 30 days prior to, or 12 months following, a change in control, he is entitled to receive (i) salary continuation and reimbursement of premiums to continue health care benefits for a period of 12 months, (ii) a one-time bonus equal to his target bonus for the year in which he is terminated and (iii) accelerated vesting of any outstanding and unvested share options, subject in the case of the foregoing clauses (i) and (ii), to his execution of a general release in favor of our Company.

David Bharucha

Under his employment agreement, if Dr. *Bharucha* is terminated by us without cause or if Dr. Bharucha resigns for good reason, he is entitled to salary continuation and reimbursement of premiums to continue health care benefits for a period of nine months, subject to his execution of a general release in favor of our Company. If Dr. Bharucha is terminated without cause or resigns for good reason within 30 days prior to, or 12 months following, a change in control, he is entitled to receive (i) salary continuation and reimbursement of premiums to continue health care benefits for a period of nine months, (ii) a one-time bonus equal to his target bonus for the year in which he is terminated and (iii) accelerated vesting of any outstanding and unvested share options, subject in the case of the foregoing clauses (i) and (ii), to his execution of a general release in favor of our Company.

Health and Welfare and Retirement Benefits; Perquisites

Beginning in 2019, all employees either receive insurance coverage made available to the U.S. employees or group benefits insurance coverage made available to the Canadian employees. In November 2019, our Compensation Committee authorized the creation of a 401(k) plan and a registered retirement savings plan for our employees in the United States or Canada, which we have subsequently implemented for participation by our employees. We generally do not provide perquisites or personal benefits to our named executive officers, except in limited circumstances. Our Board may elect to adopt qualified or nonqualified benefit plans in the future, if it determines that doing so is in our best interests.

Equity Benefit Plans

Equity-based compensation has been and will continue to be an important foundation in executive compensation packages as we believe it is important to maintain a strong link between executive incentives and the creation of shareholder value. We believe that performance and equity-based compensation can be an important component of the total executive compensation package for maximizing shareholder value while, at the same time, attracting, motivating and retaining high-quality executives.

Clawback Policy

In November 2023, the Compensation Committee adopted our Incentive Compensation Recoupment Policy (the “Clawback Policy”), designed to comply with Rule 10D-1 of the Exchange Act and Nasdaq Listing Rule 5608, which provides for recoupment of incentive compensation in the event of an accounting restatement resulting from material noncompliance with financial reporting requirements under the relevant securities laws. The Clawback Policy applies to our current and former executive officers. Compensation that is granted, earned or vested based wholly or in part upon attainment of a Financial Reporting Measure (as defined in the Clawback Policy) is subject to recoupment.

Non-Employee Director Compensation

Prior to our initial public offering in May 2019, we did not historically have a formal compensation policy with respect to service on our Board, but we had reimbursed our non-employee directors for direct expenses incurred in connection with attending meetings of our Board or its committees, and occasionally granted share options.

In April 2019, our Board approved a non-employee director compensation policy that became effective in connection with our initial public offering in May 2019. This policy was amended in April 2020, February 2023 and July 2023, and was most recently amended again in March 2024. Under this policy, as amended, we pay each of our non-employee directors a cash retainer for service on the Board and for service on each committee on which the director is a member. The chairperson of each committee receives a higher retainer for such service. These retainers are payable in arrears in four equal quarterly installments on the last day of each quarter, provided that the amount of such payment will be prorated for any portion of such quarter that the director is not serving on our Board or the applicable committee. No retainers were paid in respect of any period prior to the completion of our initial public offering in May 2019. The retainers paid to non-employee directors for service on the Board and for service on each committee of the Board on which the director is a member are as follows:

Position	Annual Service Retainer	Chairperson Additional Annual Retainer
Board of Directors	\$ 42,500	\$ 30,000
Audit Committee	10,000	10,000
Compensation Committee	7,500	7,500
Nominating and Corporate Governance Committee	5,000	5,000
Clinical Affairs Committee	6,000	6,000

In addition, under our non-employee director compensation policy, each non-employee director elected to our Board receives an option to purchase 42,000 of our common shares. The shares subject to each such option vest monthly over a three-year period, subject to the director's continued service as a director. Further, on the date of the annual meeting of the shareholders, each non-employee director that continues to serve as a non-employee member on our Board will receive an option to purchase 40,000 of our common shares. The shares subject to each such option will vest in twelve equal monthly installments following the date of grant, provided that such grant shall in any case vest in full on the date of the next year's annual grant, subject to the director's continued service as a director, and provided further, that such shares will vest in full upon a change in control (as defined in the 2019 Plan). The exercise price per share of these options will equal the fair market value of our common shares on the date of grant.

This policy is intended to provide a total compensation package that enables us to attract and retain qualified and experienced individuals to serve as directors and to align our directors' interests with those of our shareholders.

Director Compensation Table

The following table sets forth information regarding the compensation earned for service on our Board by our non-employee directors during the year ended December 31, 2023. Joseph Oliveto also served on our Board, but did not receive any additional compensation for his service as a director and therefore is not included in the table below. Seth H.Z. Fischer was appointed to our board in March 2023.

The compensation for Joseph Oliveto as a named executive officer is set forth above under "—Summary Compensation Table."

NAME	FEEs EARNED OR PAID IN CASH (\$)	OPTION AWARDS (\$)(1)(2)	TOTAL (\$)
Robert J. Wills	86,500	90,265	176,765
Seth H.Z. Fischer ⁽³⁾	48,000	205,857	253,857
Lisa M. Giles	65,500	90,265	155,765
Debra K. Liebert	59,000	90,265	149,265
Richard Pasternak	59,000	90,265	149,265
Michael Tomsicek	63,000	90,265	153,265

- (1) In accordance with SEC rules, this column reflects the aggregate grant date fair value of the option awards granted during fiscal year 2019 computed in accordance with ASC 718. Assumptions used in the calculation of these amounts are included in Note 9 to our audited consolidated financial statements included elsewhere in our Annual Report on Form 10-K. These amounts do not reflect the actual economic value that will be realized by our non-employee directors upon the vesting of the share options, the exercise of the share options or the sale of the common shares underlying such share options.

- (2) The following table provides information regarding the number of common shares underlying share options granted to our non-employee directors that were outstanding as of December 31, 2023:

NAME	OPTION AWARDS OUTSTANDING AT YEAR-END
Robert J. Wills	120,000
Seth H.Z. Fischer ^(a)	72,000
Lisa M. Giles	120,000
Debra K. Liebert	124,000
Richard Pasternak	124,000
Michael Tomsicek	132,447

(a) Seth H.Z. Fischer was appointed to our board in March 2023.

- (3) Seth H.Z. Fischer was appointed to our board in March 2023. All information regarding compensation and awards in this section reflects the compensation of Mr. Fischer as a director from and after March 2023.

Compensation Committee Interlocks and Insider Participation

None of the members of the Compensation Committee is currently, or has been at any time, one of our executive officers or employees. None of our executive officers currently serves, or has served during the last year, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our Board or on our Compensation Committee.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The following table sets forth information regarding beneficial ownership of our share capital as of April 15, 2024 by:

- each person, or group of affiliated persons, known by us to beneficially own, or control or direct directly or indirectly, more than 5% of our common shares;
- each of our directors;
- each of our named executive officers; and
- all of our current executive officers and directors as a group.

The percentage ownership information is based on 53,245,165 common shares outstanding as of April 15, 2024.

Information with respect to beneficial ownership has been furnished by each director, officer or beneficial owner of more than 5% of our common shares. We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include common shares issuable pursuant to the exercise of options that are either immediately exercisable or exercisable within 60 days of April 15, 2024. These shares are deemed to be outstanding and beneficially owned by the person holding those options for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them, subject to applicable community property laws.

Except as otherwise noted below, the address for each person or entity listed in the table is c/o Milestone Pharmaceuticals Inc., 1111 Dr. Frederik-Philips Blvd., Suite 420, Montréal, Québec CA H4M 2X6.

NAME	NUMBER OF SHARES BENEFICIALLY OWNED	PERCENTAGE OF SHARES BENEFICIALLY OWNED
Greater than 5% Shareholders:		
Entities affiliated with RTW Investments L.P. ⁽¹⁾	5,548,152	9.9%
Blackrock, Inc. ⁽²⁾	3,270,749	6.1%
Directors and Named Executive Officers:		
Joseph Oliveto ⁽³⁾	2,047,987	3.7%
David Bharucha ⁽⁴⁾	258,557	*
Amit Hasija ⁽⁵⁾	459,621	*
Debra K. Liebert ⁽⁶⁾	134,127	*
Richard Pasternak ⁽⁷⁾	134,000	*
Michael Tomsicek ⁽⁸⁾	147,447	*
Seth H.Z. Fischer ⁽⁹⁾	42,250	*
Lisa M. Giles ⁽¹⁰⁾	120,000	*
Robert J. Wills ⁽¹¹⁾	135,000	*
All current executive officers and directors as a group (11 persons) ⁽¹²⁾	4,452,555	7.8%

* Represents beneficial ownership of less than 1%.

- (1) Based in part on a Schedule 13G/A as filed by RTW Investments, LP (“RTW”) on February 14, 2024. Consists of (a) 3,256,102 common shares and (b) 2,292,050 common shares issuable upon exercise of certain pre-funded warrants issued in July 2020 (the “July Pre-Funded Warrants”) held directly by RTW Master Fund, Ltd. As a result of the Ownership Caps (as defined below), the following have been excluded from the amounts reported above as beneficially owned: (a) 4,373,081 July Pre-Funded Warrants, (b) 952,380 common shares issuable upon exercise of certain pre-funded warrants issued in October 2020 (the “October Pre-Funded Warrants”), (c) 910,746 common shares issuable upon exercise of certain pre-funded warrants issued in May 2021 (the “May Pre-Funded Warrants”) and (d) 1,059,000 pre-funded warrants issued in March 2023 (the “March Pre-Funded Warrants”, and together with the July Pre-Funded Warrants and the October Pre-Funded Warrants, the “Pre-Funded Warrants”). RTW Investments, LP is the investment manager of RTW Master Fund, Ltd., and has the power to vote and the power to direct the disposition of all such common shares held by the fund. Roderick Wong, M.D. is the Managing Partner and Chief Investment Officer of RTW Investments, LP and may be deemed to beneficially own such common shares. The address of RTW Investments, LP and Dr. Wong is 40 10th Avenue, Floor 7, New York, New York, 10014.
- (2) Based solely on a Schedule 13G/A as filed by Blackrock, Inc. on January 24, 2024. The principal business address of Blackrock, Inc. is BlackRock, Inc., 55 East 52nd Street, New York, NY 10055.
- (3) Includes 1,762,811 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.
- (4) Includes 243,437 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.
- (5) Includes 440,417 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.
- (6) Includes (a) 124,000 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024 and (b) 10,000 common shares held by The Liebert Rodriguez Revocable Trust. Ms. Liebert is the trustee of The Liebert Rodriguez Revocable Trust and, as such, has voting and investment power over the shares held by The Liebert Rodriguez Revocable Trust.
- (7) Includes 124,000 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.
- (8) Includes 132,447 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.

- (9) Represents common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.
- (10) Represents common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.
- (11) Includes 120,000 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.
- (12) Includes 3,974,542 common shares underlying outstanding options that are immediately exercisable or will be immediately exercisable within 60 days of April 15, 2024.

Equity Compensation Plan Information

The following table provides certain information with respect to all of our equity compensation plans in effect as of December 31, 2023.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)(#)	Weighted-average exercise price of outstanding options, warrants and rights (b)(\$)	Number of securities remaining available for issuance under equity compensation plans (excluding securities reflected in column (a)) (c)(#)
Equity compensation plans approved by security holders:			
2011 Stock Option Plan	1,694,233	2.09	—(1)
2019 Equity Incentive Plan	6,406,897	5.82	1,704,960(2)
2019 Employee Share Purchase Plan	—	—	1,463,936(3)
Equity compensation plans not approved by security holders			
2021 Inducement Plan (4)	625,000	5.74	375,000
Total	8,726,130	5.09	3,543,896

- (1) Following the adoption of the 2019 Plan, no additional share awards have been or will be granted under the 2011 Plan. Any shares becoming available under the 2011 Plan by repurchase, forfeiture, expiration or cancellation will become available for grant under the 2019 Plan.
- (2) The number of the Company's common shares reserved for issuance under the 2019 Plan automatically increases on January 1 of each calendar year, starting on January 1, 2020 through January 1, 2029, in an amount equal to 4% of the total number of the Company's capital shares outstanding on the last day of the calendar month before the date of each automatic increase, or a lesser number of shares determined by the Board. In connection with our 2022 annual meeting of shareholders, we amended the 2019 Plan to provide that (1) an additional 1,000,000 shares may be issued pursuant to share awards granted under the 2019 Plan and (2) an additional 3,000,000 shares are authorized for issuance under the 2019 Plan pursuant to the grant of incentive stock options.
- (3) The number of Company's common shares reserved for issuance under the 2019 ESPP automatically increases on January 1 of each calendar year, beginning on January 1, 2020 through January 1, 2029, by the lesser of (1) 1% of the total number of shares of the Company's share capital outstanding on the last day of the calendar month before the date of the automatic increase and (2) 487,837 shares; provided that before the date of any such increase, the Board may determine that such increase will be less than the amount set forth in clauses (1) and (2).

In November 2021, our Board adopted the 2021 Inducement Plan, under which we reserved 1,000,000 of the Company's common shares. Shareholder approval of the 2021 Inducement Plan was not required under Nasdaq Marketplace Rule 5635(c)(4). The 2021 Inducement Plan provides for the issuance of nonstatutory stock options, restricted stock awards, restricted stock unit awards, stock appreciation rights, performance stock awards and other stock awards exclusively to individuals who were not previously employees or directors of the Company, or who had experienced a bona fide period of non-employment, as an inducement material to the individual's entry into employment with us within the meaning of Nasdaq Marketplace Rule 5635(c)(4). The terms of awards under the 2021 Inducement Plan are substantially similar to those of the 2019 Equity Incentive Plan, including the treatment of awards upon a corporate transaction or change in control. As of December 31, 2023, 625,000 options to purchase shares were outstanding under the 2021 Inducement Plan. All options granted under the 2021 Plan have a maximum term of ten years. Awards under the 2021 Inducement Plan may be amended by the Board or Compensation Committee at any time or from time to time in accordance with the terms of the 2021 Inducement Plan and applicable law.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

The following includes a summary of transactions and agreements since January 1, 2023 and any currently proposed transactions or agreements, to which we were, or are to be, a participant (or to which any of our subsidiaries was, or is to be, a participant), in which (1) the amount involved 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 (2) any of the following persons had or will have a direct or indirect material interest, other than compensation and other arrangements that are described under the section titled “Item 11. Executive Compensation”: (i) any director; (ii) director nominee; (iii) executive officer; (iv) holders of more than 5% of our share capital; (v) any person who beneficially owns, or controls or directs, directly or indirectly, voting securities of the Company or a combination of both carrying more than 10% of the voting rights attached to all outstanding voting securities of the Company other than voting securities held by the person as underwriter in the course of a distribution; and (vi) a director or executive officer of any of the Company’s subsidiary or of any person set forth in the preceding clause (v); and (vii) associates, affiliates or members of the immediate family of any person set forth in the preceding clauses (i)-(vi).

We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that we would pay or receive, as applicable, in arm’s-length transactions.

Registration Rights Agreement

We are party to a third amended and restated registration rights agreement, dated October 15, 2018, with certain holders of common shares issued upon conversion of preferred shares. This agreement provides that these holders are entitled to certain registration rights, including the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we otherwise file. The registration rights will terminate upon the earliest of (i) the occurrence of certain mergers or consolidations of the Company, (ii) the date on which the shares that are the subject to the agreement are publicly sold, or if they may be publicly sold: (x) pursuant to Rule 144 of the Securities Act and (y) Section 2.5 of Regulation 45-102 respecting Resale of Securities, as adopted by the Canadian Securities Administrators of and (iii) five years after the completion of such offering.

Private Placements

Royalty Purchase Agreement

On March 27, 2023, we entered into a Purchase and Sale Agreement (the “Royalty Purchase Agreement”) with RTW Investments, LP and certain of its affiliates (collectively, “RTW”).

Pursuant to the Royalty Purchase Agreement, RTW agreed to purchase, following U.S. Food and Drug Administration (“FDA”) approval of etripamil (subject to certain conditions), in exchange for a purchase price of \$75.0 million, the right to receive a tiered quarterly royalty payments (the “royalty interest”) on the annual net product sales of etripamil in the United States in an amount equal to: (i) 7% (the “Initial Tier Royalty”) of annual net sales up to \$500 million, (ii) 4% of annual net sales greater than \$500 million and less than or equal to \$800 million, and (iii) 1% of annual net sales greater than \$800 million. If certain revenue thresholds for aggregate annual net sales in the United States are not met, the Initial Tier Royalty will increase to 9.5% beginning on January 1 of the following calendar year until a subsequent sales threshold is attained, at which time the Initial Tier Royalty would revert back to 7%.

The Royalty Purchase Agreement contains various representations and warranties, covenants, indemnification obligations and other provisions customary for transactions of this nature, including the grant of a back-up security interests in the purchased royalties and certain assets related to etripamil and restrictions on the incurrence of additional indebtedness.

Note Purchase Agreement

On March 27, 2023, we entered into a Note Purchase Agreement (as amended, the “Note Purchase Agreement”) with RTW. Pursuant to the Note Purchase Agreement, on March 29, 2023, we issued and sold \$50 million principal amount of 6.0% Convertible Senior Notes due 2029 (the “2029 Convertible Notes”) to RTW.

The 2029 Convertible Notes are senior secured obligations and are guaranteed on a senior secured basis by our wholly owned subsidiary, Milestone Pharmaceuticals USA, Inc. Interest at the annual rate of 6.0% is payable quarterly in cash or, at our option, payable in kind for the first three years. The maturity date for the 2029 Convertible Notes will be March 31, 2029 (the “Maturity Date”). The obligations under the 2029 Convertible Notes are secured by substantially all of our and our subsidiary guarantor’s assets.

Each \$1,000 of principal of the 2029 Convertible Notes (including any interest added thereto as payment in kind) is convertible into 191.0548 shares of our common shares, equivalent to an initial conversion price of approximately \$5.23 per share, subject to customary anti-dilution adjustments. In addition, following a notice of redemption or certain corporate events that occur prior to the Maturity Date, we will, in certain circumstances, increase the conversion rate for a Holder who elects to convert its 2029 Convertible Notes in connection with such notice of redemption or corporate event.

Subject to specified conditions, on or after March 27, 2027, the 2029 Convertible Notes are redeemable by us if the closing sale price of the common shares exceeds 150% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including the trading day immediately preceding the date on which we provide notice of redemption, during any 30 consecutive trading day period ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption, at a redemption price equal to 100% of the principal amount of the 2029 Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

The Note Purchase Agreement contains customary terms and covenants, including negative covenants, such as limitations on indebtedness, liens, disposition of royalty interest and mergers. The Note Purchase Agreement also contains customary events of default, including defaults related to payment compliance, material inaccuracy of representations and warranties, covenant compliance, bankruptcy and insolvency proceedings, cross defaults to certain other agreements, judgment default and certain clinical trial failures.

February 2024 Private Placement

On February 28, 2024, we issued and sold to certain institutional and accredited investors (the “Investors”) in a private placement (the “Private Placement”) an aggregate of 19,666,667 shares (the “Shares”) of the Company’s common stock, without par value, in addition to pre-funded warrants (the “Private Placement Pre-Funded Warrants”) to purchase an aggregate of 3,333,333 shares of common stock. The purchase price per Share was \$1.50 (or \$1.499 per Private Placement Pre-Funded Warrant, which represents the purchase price per Share to be sold in the Private Placement, minus the \$0.001 per share exercise price of each such Private Placement Pre-Funded Warrants). Affiliates of RTW Investments, LP, an existing investor that previously held five percent or more of the Company’s outstanding common stock, purchased all the Private Placement Pre-Funded Warrants.

Other Transactions

We have entered into various employment-related agreements with our executive officers that, among other things, provide for compensatory and certain change in control benefits. For a description of these agreements and arrangements, see “Item 11. Executive Compensation.”

We have also granted options to purchase shares of our common shares to our executive officers and directors. For a description of these options, see the section titled “Item 11. Executive Compensation.”

Indemnity Agreements

We have entered, and intend to continue to enter, into separate indemnity agreements with each of our directors and executive officers, in addition to the indemnification provided for in our Bylaws. These indemnity agreements provide our directors and executive officers with contractual rights to indemnification and, in some cases, expense advancement in any action or proceeding arising out of their services as one of our directors or executive officers or as a director or executive officer of any other company or enterprise to which the person provides services at our request.

Related Party Transaction Policy

In connection with the completion of our initial public offering in May 2019, our Board adopted a written related party transaction policy that sets forth our procedures for the identification, review, consideration and approval or ratification of related party transactions. For purposes of this policy only, a “related person transaction” is a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we and any related person are participants involving an amount that 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. Transactions involving compensation for services provided to us as an employee, consultant or director are not considered related-person transactions under this policy. A “related person” is any executive officer, director, nominee to become a director or a holder of more than 5% of our share capital, or any affiliate or member of the immediate family of the foregoing.

Under the policy, where a transaction has been identified as a related-person transaction, management must present information regarding the proposed related-person transaction to our Audit Committee or, where review by our Audit Committee would be inappropriate due to a conflict of interest, to another independent body of our Board, for review. The presentation must include a description of, among other things, all of the parties, the direct and indirect interests of the related persons, the purpose of the transaction, the material facts, the benefits of the transaction to us and whether any alternative transactions are available, an assessment of whether the terms are comparable to the terms available from unrelated third parties and management’s recommendation. To identify related-person transactions in advance, we rely on information supplied by our executive officers, directors and certain significant shareholders. In considering related-person transactions, our Audit Committee or another independent body of our Board takes into account the relevant available facts and circumstances including, but not limited to:

- the risks, costs and benefits to us;
- the impact on a director’s independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated;
- the terms of the transaction;
- the availability of other sources for comparable services or products; and
- the terms available to or from, as the case may be, unrelated third parties under the same or similar circumstances.

All of the transactions described in this section that occurred prior to the completion of our initial public offering in May 2019 were entered into prior to the adoption of this policy. Although prior to May 2019 we did not have a written policy for the review and approval of transactions with related persons, our Board had historically reviewed and approved any transaction where a director or officer had a financial interest, including the transactions described above. Prior to approving such a transaction, the material facts as to a director’s or officer’s relationship or interest in the agreement or transaction were disclosed to our Board. Our Board took this information into account when evaluating the transaction and in determining whether such a transaction was fair to us and in the best interest of all our shareholders. Since the completion of our initial public offering in May 2019 and the implementation of our related persons transactions policy, our Board has complied with the provisions of this policy in analyzing such transactions.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

Information on the fees paid by the Company to PricewaterhouseCoopers LLP, the Company's independent registered public accounting firm and independent registered public accounting firm for the years ended December 31, 2023 and December 31, 2022 is set forth below.

Fee Category ⁽¹⁾	YEAR ENDED DECEMBER 31,	
	2023	2022
Audit Fees ⁽²⁾	325,952	325,673
Audit-related Fees ⁽³⁾	176,052	150,451
Tax Fees ⁽⁴⁾	37,393	31,829
All Other Fees ⁽⁵⁾	0	0
	<u>\$ 539,396</u>	<u>\$ 507,953</u>

- (1) Fees in this Amendment No. 1 are presented in U.S. dollars. Fees in the annual proxy statement filed with the SEC on April 28, 2023 were presented in Canadian dollars.
- (2) "Audit Fees" consist of fees for the audit of our annual consolidated financial statements.
- (3) "Audit-related Fees" include aggregate fees billed for services that are performed by the external auditor for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements and that are not reported under "Audit Fees."
- (4) "Tax Fees" include aggregate fees billed for professional services rendered by the external auditor for tax compliance, tax advice and tax planning, other than those included in "Audit Fees" or "Audit-related Fees."
- (5) "All Other Fees" consist of all other non-audit services, other than those reporting in footnotes (1), (2) and (3) above.

All auditor fees must be approved by our Audit Committee and all fees described above were pre-approved by the Audit Committee.

Pre-Approval Policies and Procedures

Our Audit Committee has adopted procedures requiring the pre-approval of all non-audit services performed by our independent registered public accounting firm in order to assure that these services do not impair the auditor's independence. These procedures generally approve the performance of specific services subject to a cost limit for all such services. This general approval is reviewed, and if necessary modified, at least annually. Management must obtain the specific prior approval of the Audit Committee for each engagement of the independent registered public accounting firm to perform other audit-related or other non-audit services. The Audit Committee does not delegate its responsibility to approve services performed by the independent registered public accounting firm to any member of management. The standard applied by the Audit Committee in determining whether to grant approval of any type of non-audit service, or of any specific engagement to perform a non-audit service, is whether the services to be performed, the compensation to be paid therefore and other related factors are consistent with the independent registered public accounting firm's independence under guidelines of the SEC and applicable professional standards. Relevant considerations include whether the work product is likely to be subject to, or implicated in, audit procedures during the audit of our financial statements, whether the independent registered public accounting firm would be functioning in the role of management or in an advocacy role, whether the independent registered public accounting firm's performance of the service would enhance our ability to manage or control risk or improve audit quality, whether such performance would increase efficiency because of the independent registered public accounting firm's familiarity with our business, personnel, culture, systems, risk profile and other factors, and whether the amount of fees involved, or the non-audit services portion of the total fees payable to the independent registered public accounting firm in the period would tend to reduce the independent registered public accounting firm's ability to exercise independent judgment in performing the audit.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES.

(a)(1) Financial Statements

See Index to Consolidated Financial Statements on page 103 of the Form 10-K, which is incorporated into this item by reference.

(a)(2) Financial Statement Schedules

All financial statement schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

(b) Exhibits

The following list of exhibits includes exhibits submitted with this Amendment as filed with the SEC and others incorporated by reference to other filings.

EXHIBIT NUMBER	DESCRIPTION
3.1	Amended Articles of Incorporation (incorporated herein by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on May 15, 2019).
3.2	Amended and Restated Bylaws (incorporated herein by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on May 15, 2019).
4.1	Form of Common Share Certificate (incorporated herein by reference to Exhibit 4.1 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
4.2	Form of Pre-Funded Warrant to Purchase Common Shares (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on July 23, 2020).
4.3	Form of Pre-Funded Warrant (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on October 26, 2020).
4.4	Third Amended and Restated Registration Rights Agreement, by and among the Company and certain of its shareholders, dated October 15, 2018 (incorporated herein by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
4.5	Description of Securities Registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended (incorporated herein by reference to Exhibit 4.5 to the Registrant's Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 29, 2023).
4.6	2021 Inducement Plan, approved by the Board of the Company on November 10, 2021 (incorporated herein by reference to Exhibit 4.10 to the Registrant's Registration Statement on Form S-8 (File No. 333-263807), filed with the SEC on March 24, 2022).
4.7	Form of Exchange Warrant (incorporated herein by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 27, 2023).
10.1+	Third Amended and Restated Stock Option Plan (incorporated herein by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
10.2+	Form of Award and Grant Notices under the Third Amended and Restated Stock Option Plan (incorporated herein by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
10.3+	Amended 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on November 10, 2022).
10.4+	Form of U.S. Stock Option Grant Notice and Stock Option Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.4 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).

- 10.5+ Form of U.S. Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.5 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
- 10.6+ Form of Canadian Stock Option Grant Notice and Option Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.6 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
- 10.7+ Form of Canadian Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the 2019 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.7 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
- 10.8+ 2019 Employee Share Purchase Plan (incorporated herein by reference to Exhibit 4.13 to the Registrant's Registration Statement on Form S-8 (File No. 333-231347), filed with the SEC on May 9, 2019).
- 10.9+ Amended and Restated Employment Agreement between Joseph Oliveto and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.9 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019), as amended by First Amendment to Amended and Restated Employment Agreement between Joseph Oliveto and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.1 to Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on June 8, 2020).
- 10.10+ Employment Agreement between Amit Hasija and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on September 9, 2019), as amended by First Amendment to Employment Agreement between Amit Hasija and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.2 to Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on June 8, 2020).
- 10.11+ Amended and Restated Employment Agreement between Francis Plat and Milestone Pharmaceuticals Inc. (incorporated herein by reference to Exhibit 10.11 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019), as amended by Amending Agreement between Francis Plat and Milestone Pharmaceuticals Inc. (incorporated herein by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on June 8, 2020).
- 10.12+ Employment Agreement, dated February 15, 2022 between David Bharucha, M.D., Ph.D. and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on February 16, 2022).
- 10.13+ Securities Purchase Agreement dated July 22, 2020 (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on July 23, 2020).
- 10.14+ Open Market Sale AgreementSM, dated July 29, 2020, by and between Milestone Pharmaceuticals Inc. and Jefferies LLC 2020 (incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-38899), filed with the SEC on July 29, 2020).
- 10.15+ Form of Indemnity Agreement (incorporated herein by reference to Exhibit 10.14 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 12, 2019).
- 10.16+ Amended and Restated Employment Agreement between Lorenz Muller and Milestone Pharmaceuticals USA, Inc. (incorporated herein by reference to Exhibit 10.12 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-230846), filed with the SEC on April 29, 2019).
- 10.17* License and Collaboration Agreement by and among the Company and Ji Xing Pharmaceuticals, Limited, dated May 15, 2021 (incorporated herein by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on August 11, 2021).
- 10.18 Consulting Agreement, between the Company and Francis Plat (incorporated herein by reference to Exhibit 10.18 to the Registrant's Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 29, 2023).
- 10.19+ Non-Employee Director Compensation Policy, as amended (incorporated herein by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on November 13, 2023).

10.20*	Exchange Agreement, dated as of March 22, 2023, by and among the Company and certain investors party thereto (incorporated herein by reference to Exhibit 10.1 to the Registrant’s Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 27, 2023).
10.21*◆	Royalty Purchase Agreement, dated as of March 27, 2023, by and among the Company and RTW (incorporated herein by reference to Exhibit 10.1 to the Registrant’s Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 31, 2023).
10.22*◆	Note Purchase Agreement, dated as of March 27, 2023, by and among the Company and RTW (incorporated herein by reference to Exhibit 10.2 to the Registrant’s Current Report on Form 8-K (File No. 001-38899), filed with the SEC on March 31, 2023).
10.23	First Amendment to Note Purchase Agreement, dated as of August 4, 2023 (incorporated herein by reference to Exhibit 10.1 to the Registrant’s Quarterly Report on Form 10-Q (File No. 001-38899), filed with the SEC on November 13, 2023).
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm (incorporated herein by reference to Exhibit 23.1 to the Registrant’s Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 21, 2024).
24.1	Power of Attorney (incorporated herein by reference to Exhibit 24.1 to the Registrant’s Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 21, 2024).
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (incorporated herein by reference to Exhibit 31.1 to the Registrant’s Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 21, 2024).
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002 (incorporated herein by reference to Exhibit 31.2 to the Registrant’s Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 21, 2024).
31.3	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.4	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002.
32.1^	Certification of Principal Executive Officer and Principal Financial Officer pursuant to Rules 13a-14(b) and 15d-14(b) promulgated under the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, as adopted pursuant to section 906 of The Sarbanes-Oxley Act of 2002 (incorporated herein by reference to Exhibit 32.1 to the Registrant’s Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 21, 2024).
97.1	Incentive Compensation Recoupment Policy (incorporated herein by reference to Exhibit 97.1 to the Registrant’s Annual Report on Form 10-K (File No. 001-38899), filed with the SEC on March 21, 2024).
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibit 101)

* Certain portions of this exhibit have been omitted pursuant to Item 601(b)(10) of Regulation S-K. The Registrant hereby undertakes to furnish to the SEC, upon request, copies of any such instruments.

◆ In accordance with Item 601(b)(10)(iv) of Regulation S-K, certain information (indicated by “[***]”) has been excluded from this exhibit.

+ Indicates a management contract or compensatory plan

^ These certifications are being furnished solely to accompany this Amendment pursuant to 18 U.S.C. Section 1350, and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and are not to be incorporated by reference into any filing of the Registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Company has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: April 29, 2024

Milestone Pharmaceuticals Inc.

/s/ Joseph Oliveto

Joseph Oliveto

Chief Executive Officer

EXECUTIVE OFFICERS

Joseph Oliveto
President, Chief Executive Officer and Director

David Bharucha, M.D., PhD., FACC
Chief Medical Officer

Amit Hasija
*Chief Financial Officer and Executive Vice President
of Corporate Development*

Lorenz Muller
Chief Commercial Officer

Jeffrey Nelson
Chief Operating Officer

BOARD OF DIRECTORS

Robert J. Wills
Chairman

Joseph Oliveto

Richard Pasternak

Debra K. Liebert

Michael Tomsicek

Seth H.Z. Fischer

Lisa M. Giles

Stuart M. Duty

Andrew R. Saik

LISTING

Our common stock is listed on Nasdaq under the ticker symbol "MIST."

TRANSFER AGENT AND REGISTRAR

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Montréal, Quebec
H3A 3S8
www.computershare.com
webqueries@computershare.com

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

PricewaterhouseCoopers LLP

LEGAL COUNSEL

Cooley LLP

ANNUAL MEETING

August 28, 2024, at 11:00 a.m. Eastern
time Virtual Meeting Only:
<https://meetnow.global/MLPVQH5>

FORM 10-K

A copy of our Form 10-K filed with the Securities and Exchange Commission (SEC) will be made available to all stockholders at no charge.

The Form 10-K also can be accessed through the SEC website at **www.sec.gov**, or through our Investor website at **investors.milestonepharma.com**.

To receive a copy by mail please contact:

Investor Relations

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