As Filed with the Securities and Exchange Commission on April 14, 2023

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form S-1

UNDER
THE SECURITIES ACT OF 1933

LADRX CORPORATION

(Exact Name of Registrant as Specified in its Charter)

Delaware	2834	58-1642740
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

LadRx Corporation
11726 San Vicente Boulevard, Suite 650
Los Angeles, California 90049
(310) 826-5648
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Stephen Snowdy, Ph.D.
Chief Executive Officer
LadRx Corporation
11726 San Vicente Boulevard, Suite 650
Los Angeles, California 90049
(310) 826-5648
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Rick A. Werner, Esq. Haynes and Boone, LLP 30 Rockefeller Plaza, 26th Floor New York, New York 10112 (212) 659-7300	M. Ali Panjwani, Esq. Pryor Cashman LLP 7 Times Square, 40th floor New York, New York 10036 (212) 421-4100

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement is declared effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box: ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

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 Securities Exchange Act of 1934, as amended.

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

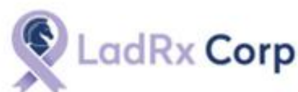
If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act, or until the registration statement shall become effective on such date as the Securities and Exchange Commission acting pursuant to said Section 8(a) may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED APRIL 14, 2023

PRELIMINARY PROSPECTUS



LadRx Corporation

Units, each unit consisting of one share of common stock and one warrant to purchase [ ] share of common stock

Up to shares of common stock underlying the warrants included in the Units

---

We are offering [ ] units, or Units, with each Unit having an assumed public offering price of $[ ] per Unit, the mid-point of the anticipated price range of the Units, of LadRx Corporation (formerly known as CytRx Corporation). We anticipate a public offering price between $[ ] and $[ ] per Unit. Each Unit consists of (i) one share of common stock, $0.001 par value per share, and (ii) one warrant, or Warrant. Each Warrant entitles the holder thereof to purchase [ ] share of common stock at an exercise price of $[ ]. Only whole warrants are exercisable. Each Warrant will be immediately exercisable for a [ ]-year period after the date of issuance. The Units have no stand-alone rights and will not be certificated or issued as stand-alone securities. The shares of common stock and the Warrants comprising the Units are immediately separable and will be issued separately in this offering.

Our common stock is quoted on the OTCQB market tier of The OTC Markets Group Inc., or The OTC Markets, under the symbol “LADX”. There is no established trading market for the Warrants. The final public offering price of the Units in this offering will be determined through negotiation between us and the underwriters in the offering, considering our historical performance and capital structure, prevailing market conditions and overall assessment of our business, and may be at a discount to the current market price. The recent market price of our common stock used throughout this prospectus may not be indicative of the final public offering price or of the prices at which our common stock may trade on Nasdaq in the future.

We intend to apply to list our common stock and the Warrants on the Nasdaq Capital Market, or Nasdaq, under the symbols “LADX” and “LADX-W”, respectively. We believe that upon the completion of the offering contemplated by this prospectus, we will meet the standards for listing on Nasdaq. We cannot guarantee that we will be successful in listing our common stock or the Warrants on Nasdaq. We will not proceed with this offering in the event that our common stock or the Warrants are not approved for listing on Nasdaq.

Our stockholders have approved a reverse stock split of our outstanding shares of our common stock in the range from 1-for-2 to 1-for-100. Our board of directors has the authority to determine whether to effect a reverse stock split and, if so to select the ratio of the reverse stock split in their discretion. Our board of directors currently intends to effect a reverse stock split in the ratio of 1-for-100. We will file a certificate of amendment to effect the reverse stock split with the Secretary of State of Delaware prior to the listing of our common stock and Warrants on Nasdaq, with such actions to be effective on, or just before, the date our common stock and Warrants are listed on Nasdaq. The reverse stock split is intended to allow us to meet the minimum share price requirement of Nasdaq. Except as otherwise indicated, all share and per share information in this prospectus (other than in the historical financial statements included herein beginning at page F-1) has been adjusted to reflect an anticipated reverse stock split in the ratio of 1-for-100.

On April 13, 2023, the last reported sales price for our common stock on The OTC Markets was $0.08 per share.

Investing in our securities involves significant risks. Please read the information under the heading “Risk Factors” beginning on page 15 of this prospectus. You should carefully read this prospectus before you invest in our securities.

	Per Unit	Total
Offering price	$	$
Underwriting discounts and commissions (1)	$	$
Proceeds to us, before expenses (2)	$	$

(1) See “Underwriting” on page 84 for additional information regarding underwriting compensation.
(2) Does not include proceeds from the exercise of the Warrants included as part of the Units sold in this offering, or the over-allotment option we have granted to the underwriters.

The offering is being underwritten on a firm commitment basis. We have granted the underwriters the right to purchase from us, at the public offering price, up to an additional [ ] shares and/or warrants to purchase up to [ ] shares within 45 days after the closing of this offering. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $[ ], and the total proceeds to us, before expenses, will be $[ ].

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or the accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the securities against payment to purchasers in this offering on or about [ ], 2023.

Roth Capital Partners

The date of this prospectus is _____________, 2023.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	2
SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS	3
PROSPECTUS SUMMARY	4
RISK FACTOR SUMMARY	8
RISK FACTORS	15
USE OF PROCEEDS	39
DIVIDEND POLICY	39
CAPITALIZATION	40
DILUTION	41
MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	57
BUSINESS	42
EXECUTIVE AND DIRECTOR COMPENSATION	66
RELATED PARTY TRANSACTIONS	73
SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT	72
DESCRIPTION OF SECURITIES TO BE REGISTERED	74
MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS	78
UNDERWRITING	84
LEGAL MATTERS	87
EXPERTS	87
WHERE YOU CAN FIND MORE INFORMATION	87
INDEX TO FINANCIAL STATEMENTS	F-1

ABOUT THIS PROSPECTUS

We are responsible for the information contained in this prospectus and any free writing prospectus we prepare or authorize.

Neither we nor the underwriters have authorized anyone to provide you with information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give to you. The information contained in this prospectus or any free writing prospectus is accurate only as of the date of this prospectus or such free writing prospectus, regardless of the time of delivery of this prospectus or any free writing prospectus. You should also read this prospectus together with the additional information described under "Where You Can Find More Information."

We are offering to sell, and seeking offers to buy, Units only in jurisdictions where offers and sales are permitted. Neither we nor the underwriters have taken any action to permit a public offering of Units or the possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside the United States who come into possession of this prospectus or any free writing prospectus must inform themselves about, and observe any restrictions relating to, this offering and the distribution of this prospectus and any free writing prospectus outside the United States.

INDUSTRY DATA

Unless otherwise indicated, information contained in this prospectus concerning our industry, including our general expectations and market opportunity, is based on information from our own management estimates and research, as well as from industry and general publications and research, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, assumptions and estimates of our industry's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described below in the "Risk Factors" section of this prospectus. These and other factors could cause our future performance to differ materially from our assumptions and estimates.

TRADEMARKS

LadRx, CytRx, LADR and ACDx are some of our trademarks used in this prospectus. This prospectus also includes trademarks, trade names and service marks that are the property of other organizations. Solely for convenience, trademarks and trade names referred to in this prospectus sometimes appear without the ® and ™ symbols, but those references are not intended to indicate that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these trademarks and trade names.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that relate to our current expectations and views of future events. These forward-looking statements are contained principally in the sections entitled "Prospectus Summary," "Risk Factors," "Use of Proceeds," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business." Forward-looking statements can often be identified by the use of terminology such as "subject to", "believe," "anticipate," "plan," "expect," "intend," "estimate," "project," "may," "will," "should," "would," "could," "can," the negatives thereof, variations thereon and similar expressions, or by discussions of strategy. In addition, any statements or information that refer to expectations, beliefs, plans, projections, objectives, performance or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking.

The forward-looking statements contained in this prospectus are based on current expectations, assumptions, and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments will be those that have been assumed or anticipated. These forward-looking statements are subject to a number of risks and uncertainties (some of which are beyond our control) that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, those factors described under the heading "Risk Factors." Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, except as may be required under applicable securities laws. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and achievements may be different from what we expect. We qualify all our forward-looking statements by these cautionary statements.

An investment in us is speculative and involves a high degree of risk due to the nature of our business. All the forward-looking statements contained in this prospectus are expressly qualified by the foregoing cautionary statements. Investors should read this entire prospectus and consult their own professional advisors to ascertain and assess the income tax, legal, risk factors and other aspects of their investment in the Units.

PROSPECTUS SUMMARY

This summary highlights certain information contained elsewhere in this prospectus. This summary does not contain all of the information that may be important to you. You should read and carefully consider the following summary together with the entire prospectus, especially the "Risk Factors" section of this prospectus and our financial statements and the notes thereto appearing elsewhere in this prospectus before deciding to invest in our Units. For more information on our business, refer to the "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operation" sections of this prospectus. Some of the statements in this prospectus constitute forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in such forward-looking statements as a result of certain factors, including those discussed in the "Risk Factors" and other sections of this prospectus. See "Special Note Regarding Forward-Looking Statements."

In this prospectus, unless otherwise stated or the context indicates otherwise requires, references to "LadRx", "CytRx", "Company", "we", "us", "our" or similar references mean LadRx Corporation and its subsidiaries on a consolidated basis. References to "LadRx Corporation" refer to LadRx Corporation on an unconsolidated basis.

Company Overview

We are a biopharmaceutical research and development company specializing in oncology. Our focus is on the discovery, research and clinical development of novel anti-cancer drug candidates that employ novel technologies that target chemotherapeutic drugs to solid tumors and reduce off-target toxicities. During 2017, our discovery laboratory in Freiburg, Germany synthesized and tested over 75 rationally designed drug candidates with highly potent anti-cancer payloads, culminating in the creation of two distinct classes of compounds. Four lead candidates (LADR-7 through LADR-10) were selected based on *in vitro* and animal studies in several different cancer models, and based on stability and manufacturing feasibility. In addition, a novel companion diagnostic, ACDx™, was developed to identify patients with cancer who are most likely to benefit from treatment with these drug candidates. However, our research and development activities have been curtailed as we seek additional financing.

On June 1, 2018, LadRx launched Centurion BioPharma Corporation ("Centurion"), a private subsidiary, and transferred all of its assets, liabilities and personnel associated with the laboratory operations in Freiburg, Germany. In connection with said transfer, LadRx and Centurion entered into a Management Services Agreement whereby LadRx agreed to render advisory, consulting, financial and administrative services to Centurion, for which Centurion would reimburse LadRx for the cost of such services plus a 5% service charge. On December 21, 2018, LadRx announced that Centurion had concluded the pre-clinical phase of development of its four LADR drug candidates, and of its albumin companion diagnostic (ACDx™). As a result of completing this work, operations taking place at the pre-clinical laboratory in Freiburg, Germany were no longer needed and accordingly, the lab was closed at the end of January 2019.

On March 9, 2022, Centurion merged with and into LadRx, with LadRx absorbing all of Centurion's assets and continuing after the merger as the surviving entity (the "Merger"). The Merger was implemented through an agreement and plan of merger pursuant to Section 253 of the General Corporation Law of the State of Delaware and did not require approval from either our or Centurion's stockholders. The Certificate of Ownership merging Centurion into LadRx was filed with the Secretary of State of Delaware on March 9, 2022.

Effective September 26, 2022, we changed our name from CytRx Corporation to LadRx Corporation pursuant to a Certificate of Amendment to our Restated Certificate of Incorporation (the "Certificate of Incorporation") filed with the Secretary of State of Delaware. In accordance with the DGCL, our board of directors (the "Board") approved the name change and the Certificate of Amendment. Pursuant to Section 242(b)(1) of the DGCL, stockholder approval was not required for the name change or the Certificate of Amendment

The LADR Drug Discovery Platform

Our LADR™ (Linker Activated Drug Release) technology offers the opportunity for multiple pipeline drugs. Our LADR™ technology platform consists of an organic backbone that is attached to a chemotoxic agent. The purpose of the LADR backbone is to first target and deliver the chemotoxic agent to the tumor environment, and then to release the chemotoxic agent within the tumor. By delivering, concentrating, and releasing the chemotoxic agent within the tumor, one expects to reduce the off-target side-effects of the chemotherapeutic, which in turn allows for several-fold higher dosing of the chemotherapeutic to the patient. Being small organic molecules, we expect LADR-based drugs to offer the benefits of targeting the tumor without the complexity, side effects, and expense inherent in macromolecules such as antibodies and nanoparticles.

Our LADR-based drugs use circulating albumin as the binding target and as the trojan horse to deliver the LADR drugs to the tumor. Albumin is the most abundant protein in plasma and accumulates inside tumors due to the aberrant vascular structure that exists within solid tumors. Tumors use albumin as a nutritional source and for transport of signaling and other molecules that are important to the maintenance and growth of the tumor, which makes albumin an excellent target for drugs that are intended for solid tumors.

Our LADR™ development efforts are focused on two classes of ultra-high potency albumin-binding drugs. These LADR-based drugs, LADR7, 8, 9, and 10, combine the proprietary LADR™ backbone with novel derivatives of the auristatin and maytansinoid drug classes. Auristatin and maytansinoid are highly potent chemotoxins, and require targeting to the tumor for safe administration to humans, as is the case for the U.S. Food and Drug Administration (“FDA”)-approved drugs Adcetris (auristatin antibody-drug-conjugate by Seagen) and Kadcyla (maytansine antibody-drug-conjugate by Genentech). We believe that LADR-based drugs offer the benefits of tumor targeting without the disadvantages of antibodies and other macromolecules, which include expense, complexity, and negative side effects. Additionally, albumin is a very well-characterized drug target, [which we believe will reduce clinical and regulatory costs and risks.

Our postulated mechanism of action for LADR-based drugs is as follows:

- after administration, the linker portion of the drug conjugate forms a rapid and specific covalent bond to the cysteine-34 position of circulating albumin;

- circulating albumin preferentially accumulates in tumors due to a mechanism called “Enhanced Permeability and Retention”, which results in lower exposure to the drug in noncancerous tissues of the heart, liver, and other organs;

- once localized at the tumor, the acid-sensitive linker of the LADR™ backbone is cleaved due to the specific conditions within the tumor and in the tumor microenvironment; and

- free active drug is then released within the tumor, causing tumor cell death.

The first-generation LADR™-based drug is called Aldoxorubicin. Aldoxorubicin is the drug doxorubicin attached to the first generation LADR™ backbone (LADRs 7-10 employ a next generation LADR™ backbone). Aldoxorubicin has been administered to over 600 human subjects in human clinical trials and has proven the concept of LADR™ in that several-fold more doxorubicin can be safely administered to patients when the doxorubicin is attached to LADR™ than when administered as native doxorubicin. Aldoxorubicin has been licensed to ImmunityBio Inc. (formerly known as NantCell, Inc.) (“ImmunityBio”), and is currently in a Phase II registrational intent trial for pancreatic cancer. Aldoxorubicin is expected to enter a Phase I/II trial for glioblastoma in 2023.

The next generation LADR™ drugs are termed LADR7, 8, 9, and 10. A great deal of Investigational New Drug (“IND”) enabling work has already been accomplished on LADR7-10, including in-silico modeling, in-vitro efficacy testing in several different cancer models, in-vivo dosing, safety, and efficacy testing in several different cancer models in animals. We have also developed and proven manufacturability, an important step prior to beginning human clinical trials.

The IND-enabling work that remains prior to applying to the FDA for first-in-human studies for LADR7-10 is limited due to the extensive experimentation already completed. For example, in the case of LADR7, a manufacturing run under Good Manufacturing Practices (GMP) must be completed and some toxicology studies completed using the GMP material must be completed in animals. Toxicology studies with LADR7 have already been completed with non-GMP manufactured drug. Management estimates that these final IND-enabling activities for LADR7 would take approximately 12 months to complete, once funded and initiated, and that first-in-human dosing would be achieved within approximately 6-9 months after completion of the IND-enabling studies. Management further estimates that the cost to manufacture GMP material for one LADR™ drug, for example LADR7, complete all pre-IND studies, and to obtain an IND could be approximately $2 million in direct costs, based on current estimates, representing a capital-efficient path to clinical entry.

Because the LADR™ backbone in future products would be the same as the LADR™ backbone in current product candidates, (i.e. the chemotoxin can be changed without changing the LADR™ backbone), management anticipates that future product candidates beyond LADR7-10 may enjoy abbreviated pre-clinical pathways to first-in-human. Such abbreviated pathways would be subject to FDA review and agreement.

Our novel companion diagnostic, ACDx™ (albumin companion diagnostic) was developed to identify patients with cancer who are most likely to benefit from treatment with the four LADR lead assets. We have not yet determined whether the use of a companion diagnostic will be necessary or helpful, and plans to continue to investigate this question in parallel to the pre-clinical and clinical development of LADRs 7-10.

The LADR™ backbone and drugs that employ LADR™ are protected by domestic and international patents, and additional patents are pending.

Business Strategy for LADR™ Platform

Throughout 2022, with the assistance of oncology drug development experts, we have inventoried the IND-enabling data for LADRs 7-10, developed a strategy to complete the IND-enabling studies necessary for at least one LADR™ drug, and worked with vendors on establishing approximate time lines and costs to reach first-in-human dosing, inclusive of manufacturing, and completion of pre-IND studies and FDA filings, With this important groundwork completed, we believe that management is well situated to rapidly advance our next-generation LADR™ assets as soon as funding or partnering is achieved, and is working diligently to obtain funding and/or partnering of the LADR™ assets. Management will continue to explore in parallel both partnered and non-partnered funding and development strategies for LADR™ with a goal of obtaining the least costly capital possible to enable value inflection milestones.

Partnering of Aldoxorubicin

On July 27, 2017, LadRx entered into an exclusive worldwide license with ImmunityBio, Inc., granting to ImmunityBio the exclusive rights to develop, manufacture and commercialize aldoxorubicin in all indications, and we are no longer directly working on the development of aldoxorubicin. As part of the license, ImmunityBio made a strategic investment of $13 million in our common stock at $660.00 per share, a premium of 92% to the market price on that date. We also issued ImmunityBio a warrant to purchase up to 50,000 shares of common stock at $660.00, which expired on January 26, 2019. LadRx is entitled to receive up to an aggregate of $343 million in potential milestone payments contingent upon achievement of certain regulatory approvals and commercial milestones. We are also entitled to receive ascending double-digit royalties for net sales for soft tissue sarcomas and mid to high single digit royalties for other indications. There can be no assurance that ImmunityBio will achieve such milestones, approvals or sales with respect to aldoxorubicin.

ImmunityBio is conducting an open-label, randomized, Phase 2 study of a combination of immunotherapy, aldoxorubicin and standard-of-care chemotherapy versus standard-of-care chemotherapy alone for the treatment of locally advanced or metastatic pancreatic cancer in patients who have had 1 or 2 lines of treatment (Cohorts A and B) or 3 or greater lines of treatment (Cohort C). I

In December 2022, Immunity Bio held a Type B meeting with the FDA to discuss the path for approval for this combination therapy for pancreatic cancer. The FDA advised ImmunityBio to conduct a randomized trial. This Phase 2, randomized, three-cohort, open-label study plans to evaluate the comparative efficacy and overall safety of standard-of-care chemotherapy versus low-dose chemotherapy in combination with PD-L1 t-haNK, Anktiva (N-803), and aldoxorubicin in subjects with locally advanced or metastatic pancreatic cancer (NCT04390399). Each treatment setting, as well as each first- and second-line or later maintenance treatment, will be evaluated independently as Cohorts A, B, and C, respectively, with Cohorts A and B having independent experimental and control arms. The primary objective of Cohorts A and B is progression-free survival (PFS) per RECIST V1.1, and the objective of Cohort C is overall survival (OS). Secondary objectives include initial safety and additional efficacy measures, including overall response rate (ORR), complete response (CR) rate, durability of response (DoR), disease control rate (DCR), and overall survival (OS.

In January 2023, ImmunityBio announced positive results in its non-randomized fully-enrolled metastatic pancreatic cancer study in third-line or greater subjects (QUILT 88) showing that the overall survival rate for patients continues to be double compared to historical survival rates after two or more prior lines of therapy. The results were presented at the American Society of Clinical Oncology Gastrointestinal (ASCO GI) conference in San Francisco January 19-21, 2023. The median OS in this highly advanced group of patients, up to seven lines (N=83) of treatment, was 5.8 months (95% CI: 4.9, 6.4 months), exceeding the approximately 2- to 3-month historical median OS. In the third-line setting (N=41), the median OS in this group was 6.3 months (95% CI: 5.0, 7.2 months), more than doubling the historical OS. The baseline median CA 19-9 level (a marker of metastatic pancreatic disease) of the enrolled subjects (N=83) was very high at 4120 IU/ml, a significant increase from normal levels of 40 IU/ml. In subjects with CA 19-9 levels less than 4120 IU/ml (N=40), the median OS was 6.9 months (95% CI: 5.7,10.9).

Aldoxorubicin has received Orphan Drug Designation ("ODD") by the FDA for the treatment of soft tissue sarcomas ("STS"). ODD provides several benefits, including seven years of market exclusivity after approval, certain R&D related tax credits, and protocol assistance by the FDA. European regulators granted aldoxorubicin orphan designation for STS, which confers ten years of market exclusivity, among other benefits.

ImmunityBio also lists ongoing clinical studies in glioblastoma; it is currently reviewing its options in STS.

Molecular Chaperone Assets (Orphazyme)

In 2011, LadRx sold the rights to arimoclomol and iroxanadine, based on molecular chaperone regulation technology, to Orphazyme A/S ("Orphazyme", formerly Orphazyme ApS) in exchange for a one-time, upfront payment and the right to receive up to a total of $120 million in milestone payments upon the achievement of certain pre-specified regulatory and business milestones, as well as royalty payments based on a specified percentage of any net sales of products derived from arimoclomol (the "2011 Arimoclomol Agreement"). Orphazyme transferred its rights and obligations under the 2011 Arimoclomol Agreement to KemPharm Denmark A/S ("KemPharm"), a wholly owned subsidiary of KemPharm Inc., in May 2022 (the "KemPharm Transaction").

In May 2021, Orphazyme announced that the pivotal phase 3 clinical trial for arimoclomol in Amyotrophic Lateral Sclerosis did not meet its primary and secondary endpoints, reducing the maximum amount that LadRx currently has the right to receive under the 2011 Arimoclomol Agreement to approximately $100 million. Orphazyme also tested arimoclomol in Niemann-Pick disease Type C ("NPC") and Gaucher disease, and following a Phase II/III trial submitted to the FDA a New Drug Application for the treatment of NPC with arimoclomol. On June 18, 2021, Orphazyme announced it had received a complete response letter (the "Complete Response Letter") from the FDA indicating the need for additional data. In late October 2021, Orphazyme announced it held a Type A meeting with the FDA, at which the FDA recommended that Orphazyme submit additional data, information and analyses to address certain topics in the Complete Response Letter and engage in further interactions with the FDA to identify a pathway to resubmission. The FDA concurred with Orphazyme's proposal to remove the cognition domain from the NPC Clinical Severity Scale ("NPCCSS") endpoint, with the result that the primary endpoint is permitted to be recalculated using the 4- domain NPCCSS, subject to the submission of additional requested information which Orphazyme had publicly indicated that it intended to provide. To bolster the confirmatory evidence already submitted, the FDA affirmed that it would require additional in vivo or pharmacodynamic (PD)/pharmacokinetic (PK) data. Orphazyme planned to request a Type C Meeting with the FDA in the second quarter of 2022. Subject to discussions with the regulatory body, Orphazyme had publicly indicated that it planned to resubmit the NDA for arimoclomol in the second half of 2022.

Orphazyme had also submitted a Marketing Authorization Application ("MAA") with the European Medicines Agency (the "EMA"). In February 2022, Orphazyme announced that although they had received positive feedback from the Committee for Medicinal Products for Human Use ("CHMP") of the EMA, they were notified by the CHMP of a negative trend vote on the MAA for arimoclomol for NPC following an oral explanation. In March 2022 Orphazyme removed its application with the EMA. Orphazyme has publicly indicated that it will assess its strategic options and provide an update to the market at the applicable time.

On May 31, 2022, Orphazyme announced that it had completed the sale of substantially all of its assets and business activities for cash consideration of $12.8 million and assumption of liabilities estimated to equal approximately $5.2 million to KemPharm, a specialty biopharmaceutical company focused on the discovery and development of novel treatments for rare central nervous system ("CNS") diseases. As part of the KemPharm Transaction, all of Orphazyme's obligations to LadRx under the 2011 Arimoclomol Agreement, including with regard to milestone payments and royalties on sales, were assumed by KemPharm. KemPharm is expected to continue the early access programs with arimoclomol, and to continue to pursue the potential approval of arimoclomol as a treatment option for NPC. KemPharm has indicated it plans on resubmitting the NDA for arimoclomol to the FDA in the third quarter of 2023. In February 2023, KemPharm published positive data based on the recent completion of their four-year open-label safety trial that indicated arimoclomol may reduce the long-term progression of NPC. They plan on including these data as part of the updated NDA resubmission. It is also identifying a regulatory path forward with the EMA. KemPharm has recently re-branded to Zevra Therapeutics, Inc.

Corporate Information

We are a Delaware corporation, incorporated in 1985. Our corporate offices are located at 11726 San Vicente Boulevard, Suite 650, Los Angeles, California 90049, and our telephone number is (310) 826-5648. Our web site is located at http://www.ladrxcorp.com. Our filings with the Securities and Exchange Commission (the "SEC") will be available free of charge through the website as soon as reasonably practicable after being electronically filed with or furnished to the SEC. Information contained in our website is not a part of, nor incorporated by reference into, this prospectus or our other filings with the SEC, and should not be relied upon.

SUMMARY OF RISK FACTORS

Investing in our securities is speculative and involves substantial risk. You should carefully consider all of the information in this prospectus prior to investing in our securities. There are numerous risk factors related to our business that are described under "Risk Factors" beginning on page 15 and elsewhere in this prospectus. Some of these risks include the following:

Risks Associated With Our Business:

- We have operated at a loss and will likely continue to operate at a loss for the foreseeable future.
- Because we have no source of significant recurring revenue, we must depend on capital raising to sustain our operations, and our ability to raise capital may be severely limited.
- If KemPharm fails to successfully develop and commercialize arimoclomol, our business prospects will be materially adversely affected.
- If ImmunityBio fails to successfully develop aldoxorubicin or our exclusive licensing arrangement with ImmunityBio is otherwise unsuccessful, our business prospects will be materially adversely affected.
- Our independent registered public accounting firm has included an explanatory paragraph in its report as of and for the year ended December 31, 2022 expressing substantial doubt in our ability to continue as a going concern based on our recurring and continuing losses from operations and our need for additional funding to continue operations.

Risks Associated With Drug Discovery and Development:

- If the projected development goals for our product candidates are not achieved in the expected time frames, the commercialization of our products may be delayed and our business prospects may suffer. Our financial projections also may prove to be materially inaccurate.
- The regulatory approval process is lengthy, time consuming and inherently unpredictable, and if our products or those we have sold or licensed are not successfully developed and approved by the FDA or foreign regulatory authorities, we may be forced to reduce or curtail our operations.
- Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.
- We may be unable to protect our intellectual property rights, which could adversely affect our ability to compete effectively.
- If our product candidates infringe the rights of others, we could be subject to expensive litigation or be required to obtain licenses from others to develop or market them.
- The results of pre-clinical studies or early clinical trials are not necessarily predictive of future results, and our ultra-high potency albumin-binding drug conjugates may not have favorable results in later clinical trials or receive regulatory approval.
- Any products that we develop, sell or may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, which could have a material adverse effect on our business.
- Healthcare legislative reform measures could hinder or prevent the commercial success of our products and product candidates.
- We may also be subject to healthcare laws, regulation and enforcement and our failure to comply with those laws could adversely affect our business, operations and financial condition.
- We will be required to pay substantial milestone and other payments relating to the commercialization of our products.
- The COVID-19 pandemic could adversely impact our business and prospects, including active and planned clinical trials by ImmunityBio and KemPharm.
- In the event of a dispute regarding our international drug development, it may be necessary for us to resolve the dispute in the foreign country of dispute, where we would be faced with unfamiliar laws and procedures.
- Drug discovery is a complex, time-consuming and expensive process, and we may not succeed in creating new product candidates.
- We have a limited operating history in drug discovery, which is inherently risky, and we may not succeed in addressing these risks.

General Risk Factors:

- We are subject to intense competition, and we may not compete successfully.
- We are subject to potential liabilities from clinical testing and future product liability claims.
- We may be unable to successfully acquire additional technologies or products. If we require additional technologies or products, our product development plans may change and the ownership interests of our stockholders could be diluted.
- The impact and results of our exploration of any strategic alternatives are uncertain and may not be successful.
- We rely significantly on information technology and any failure, inadequacy, interruption or security lapse of that technology, including any cybersecurity incidents, could harm our ability to operate our business effectively.
- Our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.
- You may experience future dilution as a result of future equity offerings or other equity issuances.
- Our outstanding options and warrants and the availability for resale of the underlying shares may adversely affect the trading price of our common stock.
- We cannot assure investors that our internal controls will prevent future material weaknesses.
- We could be subject to legal actions that could adversely affect our financial condition.
- Our anti-takeover measures may make it more difficult to change our management, or may discourage others from acquiring us, and thereby adversely affect stockholder value.
- Our By-Laws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

- We may issue preferred stock in the future, and the terms of the preferred stock may reduce the value of our common stock.
- We do not expect to pay any cash dividends on our common stock.

Risks Related to this Offering:

- You will experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase in this offering.
- Substantial future sales or other issuances of our common stock could depress the market for our common stock.
- Nasdaq may delist our securities from its exchange, which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.
- We have broad discretion in the use of the net proceeds of this offering and, despite our efforts, we may use the net proceeds in a manner that does not increase the value of your investment.
- You may experience future dilution as a result of future equity offerings.
- We are a "smaller reporting company" under the SEC's disclosure rules and have elected to comply with the reduced disclosure requirements applicable to smaller reporting companies.
- As a non-accelerated filer, we are not required to comply with the auditor attestation requirements of the Sarbanes-Oxley Act.
- If and when our common stock is listed on Nasdaq, we will incur materially increased costs and become subject to additional regulations and requirements.

Risks Related to Our Intended Reverse Stock Split:

- Even if the reverse stock split achieves the requisite increase in the market price of our common stock, we cannot assure you that we will be able to continue to comply with the minimum bid price requirement of Nasdaq.
- The reverse stock split may decrease the liquidity of the shares of our common stock.
- Following the reverse stock split, the resulting market price of our common stock may not attract new investors, including institutional investors, and may not satisfy the investing requirements of those investors. Consequently, the trading liquidity of our common stock may not improve.

Risks Related to Our Warrants:

- Our Warrants have no prior trading history and an active market may not develop, which may limit the ability of our investors to sell Warrants.
- Holders of Warrants purchased in this offering will have no rights as common stockholders until such holders exercise their Warrants and acquire our common stock, except as set forth in the Warrants.
- The Warrants are speculative in nature.

THE OFFERING

Securities offered by us	[ ] Units, with each Unit consisting of one share of our common stock and one Warrant to purchase [ ] share of our common stock at an assumed public offering price of $ per Unit. The Units will not be certificated, and the share of common stock and Warrant comprising each Unit will be immediately separable and will be issued separately in this offering. This prospectus also relates to the offering of shares of common stock issuable upon the exercise of the Warrants included in the Units.
Warrants	[_]
Over-allotment option	We have granted the underwriters an option, exercisable within 45 days after the closing of the offering, to purchase up to an additional [ ] shares of common stock and/or Warrants at the public offering price. The exercise price and the number of shares into which the Warrant may be exercised are subject to adjustments in certain circumstances. See "Description of Securities to be Registered—Warrants" on page 74 for a discussion of the terms of the Warrants
Common stock outstanding immediately prior to this offering(1)	[ ] shares.
Common stock outstanding immediately after this offering(1)	[ ] shares, or [ ] shares if the underwriters exercise their option in full (in each case, assuming no exercise of the Warrants included in this offering).
Use of Proceeds	We estimate that we will receive net proceeds from this offering of approximately $[ ] million, or approximately $[ ] million if the underwriters exercise their over-allotment option in full, based on an assumed public offering price of $[ ] per Unit, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds of this offering for the development of our LADR assets and for working capital and other general corporate purposes. See "Use of Proceeds" on page 39.
Underwriter compensation	In connection with this offering, the underwriter will receive an underwriting discount equal or spread payable in cash of 7.0% of the public offering price of the Units in the offering. We will also reimburse the underwriter for certain reasonably anticipated out-of-pocket expenses related to the offering. See "Underwriting" on page 84.
OTC Markets Symbol	Our common stock is quoted on the OTCQB market tier of The OTC Markets under the symbol "LADX."
Proposed Nasdaq symbol for our common stock and the Warrants	We intend to apply to list our common stock and the Warrants on Nasdaq under the symbols "LADX" and "LADX-W", respectively. No assurance can be given that an active trading market will develop for the common stock or the Warrants. We believe that upon the completion of the offering contemplated by this prospectus, we will meet the standards for listing on Nasdaq. We cannot guarantee that we will be successful in listing our common stock or our Warrants on Nasdaq; however, we will not complete this offering unless we are so listed.

Risk Factors	Investing in our securities is highly speculative and involves a high degree of risk. See "Risk Factors" beginning on page 15 of this prospectus and the other information included in this prospectus for a discussion of factors you should consider carefully before investing in our common stock and our Warrants.
Lock-Up Agreements	We and our directors, officers and other significant holders of our common stock have agreed with the underwriters not to offer, issue, sell, contract to sell, encumber, grant any option for the sale of or otherwise dispose of any of our securities for a period of six months after the date the offering is completed without Roth's prior written consent. See "Underwriting" on page 84.

Outstanding Shares

(1) After taking into consideration an expected reverse stock split of 1-for-100, the number of shares of our common stock to be outstanding after this offering is based on 465,587 shares of our common stock outstanding as of March 31, 2023, and excludes:

- 17,651 shares reserved for issuance upon the exercise of outstanding stock options at a weighted average exercise price of $683.00 per share;
- 42 shares reserved for issuance upon the exercise of outstanding warrants at a weighted average exercise price of $3,360.00 per share;
- 113,636 shares reserved for issuance upon the exercise of outstanding preferred investment options at an exercise price of $88.00 per share;
- 16,027 shares reserved for issuance upon the conversion of outstanding preferred stock; and
- [ ] shares of common stock issuable upon exercise of the Warrants issued in this offering

Except as otherwise indicated, all information in this prospectus assumes (i) no exercise by the underwriters of their option to purchase additional shares of our common stock and/or Warrants; (ii) no exercise or conversion of the outstanding options or warrants described above; and (iii) no exercise of the Warrants offered and sold in this offering.

Except as otherwise indicated, all information included in this prospectus has been adjusted to reflect an anticipated 1-for-100 reverse stock split of our common stock. All share and per share information in this prospectus (other than in the historical financial statements included herein beginning at page F-1) has been adjusted to reflect an expected reverse stock split of 1-for-100 of the authorized and outstanding common stock.

SUMMARY FINANCIAL INFORMATION

The following tables summarize our consolidated financial data for the periods indicated. We derived our summary consolidated statements of operations data for the years ended, and our balance sheet data as of December 31, 2022 and 2021, from the audited consolidated financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in any future period.

The summary consolidated financial data below should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” beginning on page 57, and our consolidated financial statements and related notes included elsewhere in this prospectus.

LADRX CORPORATION
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2022	**2021**
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,374,992	$ 6,769,603
Insurance claim receivable	—	200,000
Prepaid expenses and other current assets	628,745	1,310,382
Total current assets	2,003,737	8,279,985
Equipment and furnishings, net	18,546	32,784
Other assets	7,703	16,836
Operating lease right-of-use assets	216,786	397,172
Total assets	$ 2,246,772	$ 8,726,777
LIABILITIES AND STOCKHOLDERS’ EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable	$ 975,944	$ 1,470,652
Accrued expenses and other current liabilities	1,015,501	2,064,506
Current portion of operating lease obligations	196,081	198,819
Total current liabilities	2,187,526	3,733,977
Operating lease liabilities, net of current portion	33,526	216,381
Total liabilities	2,221,052	3,950,358
Preferred Stock, Series C 10% Convertible, $1,000 par value, 2,752 and 8,240 shares issued and outstanding at December 31, 2022 and 2021, respectively	1,343,684	4,022,700
Commitments and contingencies		
Stockholders’ equity (deficit):		
Preferred Stock, $0.01 par value, 833,333 shares authorized, including 50,000 shares of Series B Junior Participating Preferred Stock; no shares issued and outstanding at December 31, 2022 and 2021, respectively	—	—
Common stock, $0.001 par value, 62,393,940 shares authorized; 450,374 and 387,800 shares issued and outstanding at December 31, 2022 and 2021, respectively	45,037	38,780
Additional paid-in capital	487,474,664	484,790,650
Accumulated deficit	(488,837,665)	(484,075,711)
Total stockholders’ equity (deficit)	(1,317,964)	753,719
Total liabilities and stockholders’ equity (deficit)	$ 2,246,772	$ 8,726,777

LADRX CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,	
	2022	**2021**
Revenue:		
Licensing revenue	$ —	$ —
Expenses:		
General and administrative	4,545,884	5,966,415
Settlement with former Chief Executive Officer	—	6,096,597
Depreciation and amortization	15,004	13,978
	4,560,888	12,076,990
Loss from operations	(4,560,888)	(12,076,990)
Other income (expense):		
Liquidated damages expense	—	(1,109,653)
Forgiveness of accounts payable	351,241	—
Interest income	11,689	16,822
Other income (expense), net	(2,615)	(6,842)
Net Loss	(4,200,573)	(13,176,663)
Dividends paid on preferred shares	(561,381)	(171,668)
Net loss attributable to common stockholders	$ (4,761,954)	(13,348,331)
Basic and diluted loss per share	$ (10.98)	$ (35.52)
Basic and diluted weighted average shares outstanding	433,592	375,847

RISK FACTORS

Investing in our securities is speculative and involves substantial risk. You should carefully consider all of the information in this prospectus prior to investing in our securities, including the risks described below. These risks could materially and adversely impact our business, results of operations, financial condition and future prospects, which could cause the trading price of our common stock to decline and could result in a loss of your investment. Among these important risks are the following:

Risks Associated With Our Business

We have operated at a loss and will likely continue to operate at a loss for the foreseeable future.

We have operated at a loss due to our ongoing expenditures for research and development of our product candidates and for general and administrative purposes, and lack of significant recurring revenues. We incurred a net loss of $4.2 million for the year ended December 31, 2022 and $13.2 million for the year ended December 31, 2021 and had a stockholder deficit as of December 31, 2022 of $1.3 million. We are likely to continue to incur losses unless and until we are able to reach milestones and earn royalties from our existing licensing and sale agreements and/or conclude a successful strategic partnership or financing for our LADR™ technology. These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity and working capital. Because of the numerous risks and uncertainties associated with our product development efforts, we are unable to predict when we may become profitable, if at all. If we do not become profitable or are unable to maintain future profitability, the market value of our common stock will be adversely affected. These factors individually and collectively raise a substantial doubt about our ability to continue as a going concern.

Our independent registered public accounting firm has included an explanatory paragraph in its report as of and for the year ended December 31, 2022 expressing substantial doubt in our ability to continue as a going concern based on our recurring and continuing losses from operations and our need for additional funding to continue operations. Our consolidated financial statements do not include any adjustments that might result from the outcome of this going concern uncertainty and have been prepared under the assumption that we will continue to operate as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. If we are unable to continue as a going concern, we may be forced to liquidate our assets which would have an adverse impact on our business and developmental activities. In such a scenario, the values we receive for our assets in liquidation or dissolution could be significantly lower than the values reflected in our financial statements. The reaction of investors to the inclusion of a going concern statement by our independent registered public accounting firm and our potential inability to continue as a going concern may materially adversely affect our stock price and our ability to raise new capital or to enter into strategic alliances.

Because we have no source of significant recurring revenue, we must depend on capital raising to sustain our operations, and our ability to raise capital may be severely limited.

Developing products and conducting clinical trials require substantial amounts of capital. In July 2021, we were able raise some capital through the sale of common stock registered under our "shelf" registration on Form S-3, as well as through the related private placement of certain warrants and the preferred investment option. We will likely need to raise additional capital to fund our general and administrative expenses and, if we determine to develop products based on Centurion's LADR™ technology platform, we will need to raise additional capital to fund development of product candidates, prepare, file, prosecute, maintain, enforce and defend patent and other proprietary rights, and develop and implement sales, marketing and distribution capabilities.

At December 31, 2022, we had cash and cash equivalents and short-term investments of approximately $1.4 million. Our continuation as a going concern is dependent upon its ability to obtain necessary debt or equity financing to continue operations until it begins generating positive cash flow. No assurance can be given that any future financing will be available or, if available, that it will be on terms that are satisfactory to us. Even if we are able to obtain additional financing, it may contain undue restrictions on our operations, in the case of debt financing or cause substantial dilution for our stockholders, in case or equity financing.

If we raise additional funds by issuing equity securities, dilution to stockholders may result and new investors could have rights superior to current equity holders. In addition, debt financing, if available, may include restrictive covenants. If adequate funds are not available to us, we may have to liquidate some or all of our assets or delay or reduce the scope of or eliminate some portion or all of our development programs. We also may have to license to other companies our product candidates or technologies that we would prefer to develop and commercialize ourselves.

If KemPharm fails to successfully develop and commercialize arimoclomol, our business prospects will be materially adversely affected.

In 2011, we sold the rights to arimoclomol and iroxanadine, based on molecular chaperone regulation technology, to Orphazyme in exchange for a one-time, upfront payment and the right to receive up to a total of $120 million in milestone payments upon the achievement of certain pre-specified regulatory and business milestones, as well as single- and double-digit royalty payments based on a specified percentage of any net sales of products derived from arimoclomol ("2011 Arimoclomol Agreement"). Orphazyme transferred its rights and obligations under the 2011 Arimoclomol Agreement to KemPharm in May 2022. As part of the KemPharm Transaction, all of Orphazyme's obligations to LadRx under the 2011 Arimoclomol Agreement including with regard to milestone payments and royalties on sales, were assumed by KemPharm. KemPharm is expected to continue the early access programs with arimoclomol, and to continue to pursue the potential approval of arimoclomol as a treatment option for NPC. KemPharm indicated it plans on resubmitting the NDA for arimoclomol in the third quarter of 2023. It is also identifying a regulatory path forward with the EMA

In May 2021, Orphazyme announced that the pivotal phase 3 clinical trial for arimoclomol in Amyotrophic Lateral Sclerosis did not meet its primary and secondary endpoints, reducing the maximum amount that LadRx currently has the right to receive under the 2011 Arimoclomol Agreement to approximately $100 million. Orphazyme also tested arimoclomol in Niemann-Pick disease Type C ("NPC") and Gaucher disease, and following a Phase II/III trial submitted to the FDA a New Drug Application for the treatment of NPC with arimoclomol. On June 18, 2021, Orphazyme announced it had received the Complete Response Letter from the FDA indicating the need for additional data. In late October 2021, Orphazyme announced it held a Type A meeting with the FDA, at which the FDA recommended that Orphazyme submit additional data, information and analyses to address certain topics in the Complete Response Letter and engage in further interactions with the FDA to identify a pathway to resubmission. The FDA concurred with Orphazyme's proposal to remove the cognition domain from the NPC Clinical Severity Scale ("NPCCSS") endpoint, with the result that the primary endpoint is permitted to be recalculated using the 4- domain NPCCSS, subject to the submission of additional requested information which Orphazyme had publicly indicated that it intended to provide. To bolster the confirmatory evidence already submitted, the FDA affirmed that it would require additional in vivo or pharmacodynamic (PD)/pharmacokinetic (PK) data. Orphazyme planned to request a Type C Meeting with the FDA in the second quarter of 2022. Subject to discussions with the regulatory body, Orphazyme had publicly indicated that it planned to resubmit the NDA for arimoclomol in the second half of 2022.

Orphazyme had also submitted a Marketing Authorization Application ("MAA") with the European Medicines Agency (the "EMA"). In February 2022, Orphazyme announced that although they had received positive feedback from the Committee for Medicinal Products for Human Use ("CHMP") of the EMA, they were notified by the CHMP of a negative trend vote on the MAA for arimoclomol for NPC following an oral explanation. In March 2022 Orphazyme removed its application with the EMA. Orphazyme had publicly indicated that it will assess its strategic options and provide an update to the market at the applicable time.

The potential revenue from our arrangement with KemPharm is based on contingent payments, which will depend upon KemPharm's ability to achieve regulatory approvals and successfully market and sell products derived from arimoclomol. Our ability to realize the maximum amount of aggregate milestone payments initially set forth in the 2011 Arimoclomol Agreement has been reduced by approximately $20 million due to Orphazyme's unsuccessful pivotal studies of arimoclomol for ALS and IBM and subsequent decision to cease arimoclomol's development with regard such indications. While Orphazyme had progressed further in connection with its development of arimoclomol for NPC (than for ALS or IBM), its efforts to obtain the FDA and EMA approvals needed to lawfully market arimoclomol for NPC in the United States and the EU, respectively, were unsuccessful thus far, KemPharm may never succeed in its efforts to do the same. We will not be involved in this process and will depend entirely on KemPharm, which may fail to develop or effectively commercialize products derived from arimoclomol for many reasons, including if they:

- decide not to devote the necessary resources due to internal constraints, such as limited personnel with the requisite scientific expertise, limited cash resources or specialized equipment limitations, or the belief that other drug development programs may have a higher likelihood of obtaining regulatory approval or may potentially generate a greater return on investment;

- do not have sufficient resources necessary to carry arimoclomol through clinical development, regulatory approval and commercialization;
- cannot obtain the necessary regulatory approvals for arimoclomol; or
- decide to pursue a competitive drug candidate.

If KemPharm does not obtain the regulatory approvals for arimoclomol that are necessary to trigger the corresponding milestone payments to us under our agreement, or if their research and development or commercialization efforts are, otherwise, unsuccessful, we will not realize the anticipated commercial benefits of the arrangement and our business prospects will be materially and adversely affected.

If ImmunityBio fails to successfully develop aldoxorubicin or our exclusive licensing arrangement with ImmunityBio is otherwise unsuccessful, our business prospects will be materially and adversely affected.

In July 2017, we entered into an exclusive licensing agreement with ImmunityBio to complete the clinical development of and commercialization of aldoxorubicin. Under this agreement, ImmunityBio has committed to provide substantial funding, as well as significant capabilities in clinical development, regulatory affairs, marketing and sales.

If, for any reason, ImmunityBio does not devote sufficient time and resources to the development and commercialization of aldoxorubicin, we will not realize the potential commercial benefits of the arrangement, and our results of operations will be adversely affected. In addition, if ImmunityBio were to breach or terminate its arrangement with us, the development and commercialization of aldoxorubicin could be delayed, curtailed or terminated, and we may not have sufficient financial resources or capabilities to continue development and commercialization of aldoxorubicin on our own.

Under our agreement with ImmunityBio, they may opt out of a project by giving us twelve months' prior written notice. If ImmunityBio were to exercise its right to opt out of a program or to terminate the licensing agreement, the development and commercialization of aldoxorubicin would be adversely affected, our potential for generating revenue from this program would be adversely affected and attracting new partners would be made more difficult.

Much of the potential revenue from our existing and future arrangement with ImmunityBio will consist of contingent payments, such as payments for achieving development and commercialization milestones and single- and double-digit royalties payable on commercial sales of successfully developed aldoxorubicin. The milestone, royalty and other revenue that we may receive under this arrangement will depend upon our, and ImmunityBio's ability to successfully develop, introduce, market, commercialize and sell aldoxorubicin. We will not be directly involved in this process and will depend entirely on ImmunityBio, which may fail to develop or effectively commercialize aldoxorubicin for many reasons including if they:

- decide not to devote the necessary resources due to internal constraints, such as limited personnel with the requisite scientific expertise, limited cash resources or specialized equipment limitations, or the belief that other drug development programs may have a higher likelihood of obtaining regulatory approval or may potentially generate a greater return on investment;
- do not have sufficient resources necessary to carry aldoxorubicin through clinical development, regulatory approval and commercialization;
- cannot obtain the necessary regulatory approvals for aldoxorubicin; or
- decide to pursue a competitive drug candidate.

If ImmunityBio fails to develop or effectively commercialize aldoxorubicin or for any of the other reasons described above, we may not be able to develop and commercialize that drug independently or replace ImmunityBio with another suitable partner in a reasonable period of time and on commercially reasonable terms, if at all.

Risks Associated With Drug Discovery and Development

If the projected development goals for our product candidates are not achieved in the expected time frames, the commercialization of our products may be delayed and our business prospects may suffer. Our financial projections also may prove to be materially inaccurate.

From time to time, we estimate the timing of the accomplishment of various scientific, clinical, regulatory and other product development goals, which we sometimes refer to as milestones. These milestones may include the commencement or completion of scientific studies and clinical trials and the submission of regulatory filings.

We also may disclose projected expenditures or other forecasts for future periods. These and other financial projections are based on management's current expectations and do not contain any margin of error or cushion for any specific uncertainties, or for the uncertainties inherent in all financial forecasting.

The actual timing of milestones and actual expenditures or other financial results can vary dramatically compared to our estimates, in some cases for reasons beyond our control or the control of companies that have licensed or purchased our product candidates. If these milestones or financial projections are not met, the development and commercialization of our product candidates may be delayed and our business prospects may suffer. The assumptions management has used to produce these projections may significantly change or prove to be inaccurate. Accordingly, you should not unduly rely on any of these financial projections.

The regulatory approval process is lengthy, time consuming and inherently unpredictable, and if our products or those we have sold or licensed are not successfully developed and approved by the FDA or foreign regulatory authorities, we may be forced to reduce or curtail our operations.

All of our product candidates in development or those licensed or sold must be approved by the FDA or corresponding foreign governmental agencies before they can be marketed. The process for obtaining FDA and foreign government approvals is both time-consuming and costly, with no certainty of a successful outcome. This process typically includes the conduct of extensive pre-clinical and clinical testing, including post-approval testing, which may take longer or cost more than we or our licensees, if any, anticipate, and may prove unsuccessful due to 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. None of our product candidates in development or licensed or sold to third parties have received regulatory approval.

Numerous factors could affect the timing, cost or outcome of product development efforts, including the following:

- difficulty in enrolling patients in conformity with required protocols or projected timelines;
- requirements for clinical trial design imposed by the FDA;
- unexpected adverse reactions by patients in trials;
- difficulty in obtaining clinical supplies of the product;
- changes in or our inability to comply with FDA or foreign governmental product testing, manufacturing or marketing requirements;
- regulatory inspections of clinical trials or manufacturing facilities, which may, among other things, require us or our manufacturers or licensees to undertake corrective action or suspend or terminate the affected clinical trials if investigators find them not to be in compliance with applicable regulatory requirements;
- inability to generate statistically significant data confirming the safety and efficacy of the product being tested;
- modification of the product during testing; and
- reallocation of our limited financial and other resources to other clinical programs.

It is possible that none of the product candidates we develop or have sold or licensed will obtain the regulatory approvals necessary for us to begin selling them or making us eligible to receive milestone or royalty payments. The time required to obtain FDA and foreign governmental approvals is unpredictable, but often can take years following the commencement of clinical trials, depending upon the complexity of the product candidate. Any analysis performed on data from clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. In addition, even if regulatory approval was obtained, regulatory authorities may approve any product candidates for fewer or more limited indications than requested, may not approve the intended price for such products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for the product candidates that we develop, have sold or licensed.

Furthermore, even if regulatory approvals are obtained, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, import, export, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current good manufacturing practices, ("cGMPs"), and good clinical practices ("cGCPs", for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or our strategic partners, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business. We will also be subject to periodic inspections and the potential for mandatory post-approval clinical trials required by the FDA and other U.S. and foreign regulatory authorities. Any delay or failure in obtaining required approvals or to comply with post-approval regulatory requirements could have a material adverse effect on our ability to generate revenue from the particular product candidate. The failure to comply with any post-approval regulatory requirements also could result in the rescission of the related regulatory approvals or the suspension of sales of the offending product.

Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. Product candidates in later stages of clinical development may fail to show the desired safety and efficacy traits despite having progressed through preclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or safety profiles, notwithstanding promising results in earlier trials. For example, aldoxorubicin has shown encouraging preliminary clinical results in our Phase 2b clinical trial as a treatment for STS. These conclusions may not be reproduced in future clinical trial results. For instance, the Phase 3 pivotal clinical trial testing aldoxorubicin as a treatment for STS narrowly missed statistical significance although it demonstrated a statistically significant improvement in PFS over investigator's choice in 312 patients treated in North America and Australia. Accordingly, our development partner may ultimately be unable to provide the FDA and/or other U.S. and foreign regulatory authorities with satisfactory data on clinical safety and efficacy sufficient to obtain approval from the FDA of aldoxorubicin for any indication.

Further delays may occur in clinical trials of product candidates. We do not know whether ongoing clinical trials will be completed on schedule or at all, or whether planned clinical trials will begin on time, need to be redesigned, enroll patients on time or be completed on schedule, if at all. Clinical trials can be delayed for a variety of reasons, including delays related to:

- obtaining regulatory approval to commence a trial;
- reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- obtaining institutional review board approval at each clinical trial site;
- recruiting suitable patients to participate in a trial;
- having patients complete a trial or return for post-treatment follow-up;
- clinical trial sites deviating from trial protocol or dropping out of a trial;
- adding new clinical trial sites; or
- manufacturing sufficient quantities of product candidate for use in clinical trials.

We may be unable to protect our intellectual property rights, which could adversely affect our ability to compete effectively.

We will be able to protect our technologies from unauthorized use by third parties only to the extent that we have rights to valid and enforceable patents or other proprietary rights that cover them. Although we have rights to patents and patent applications directed to our product candidates, these patents and applications may not prevent third parties from developing or commercializing similar or identical technologies. In addition, our patents may be held to be invalid if challenged by third parties, and our patent applications may not result in the issuance of patents.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in biotechnology patents has emerged to date in the United States and in many foreign countries. The application and enforcement of patent laws and regulations in foreign countries is even more uncertain. Accordingly, we may not be able to effectively file, protect or defend our proprietary rights on a consistent basis. Many of the patents and patent applications on which we rely were issued or filed by third parties prior to the time we acquired rights to them. The validity, enforceability and ownership of those patents and patent applications may be challenged, and if a court decides that our patents are not valid, we will not have the right to stop others from using our inventions. There is also the risk that, even if the validity of our patents is upheld, a court may refuse to stop others on the ground that their activities do not infringe our patents.

Any litigation brought by us to protect our intellectual property rights could be costly and have a material adverse effect on our operating results or financial condition, make it more difficult for us to enter into strategic alliances with third parties to develop our products, or discourage our existing licensees from continuing their development work on our potential products. If our patent coverage is insufficient to prevent third parties from developing or commercializing similar or identical technologies, the value of our assets is likely to be materially and adversely affected.

Moreover, we may be subject to a third-party pre-issuance submission of prior art or become involved in opposition, derivation, reexamination, inter partes review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. The costs of defending our patents or enforcing our proprietary rights in post-issuance administrative proceedings and litigation can be substantial and the outcome can be uncertain. 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 products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

We have not pursued or maintained, and may not pursue or maintain in the future, patent protection for our product candidates in every country or territory in which we may sell our products, if approved. The laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from infringing our patents in all countries outside the United States, or from selling or importing products that infringe our patents in and into the United States or other jurisdictions.

Indeed, several companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of some countries do not favor the enforcement of patents and other intellectual property rights, which could make it difficult for us to stop the infringement, misappropriation or other violation of our intellectual property rights generally. Proceedings to enforce our intellectual property 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.

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

Moreover, the scope claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Changes in either the patent laws or interpretation of the patent laws may diminish the value of our or our collaborators' patents or narrow the scope of such patent protection and could increase the uncertainties and costs surrounding the prosecution of our or any future collaborators' patent applications and the enforcement or defense of any issued patents. Even if the patent applications we license or own do issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us or otherwise provide us with any competitive advantage. Our competitors or other third parties may be able to circumvent our patents by developing similar or alternative products in a non-infringing manner.

Some of our technologies and processes do not fulfill the requirements for patent or trademark protection or are not protected by patent or trademark rights for other reasons, e.g., secrecy. We therefore also rely on certain proprietary trade secrets and know-how, especially where we believe patent protection is not appropriate or obtainable. Trade secrets and know-how are difficult to protect. Although we have taken measures to protect our unpatented trade secrets and know-how, including the use of confidentiality and invention assignment agreements with our employees, consultants and some of our contractors, it is possible that these persons may disclose our trade secrets or know-how or that our competitors may independently develop or otherwise discover our trade secrets and know-how.

There is no guarantee, however, that such agreements will not be breached, that they will provide sufficient protection for our business secrets and proprietary information or that adequate remedies will be available in the event of an unauthorized use or disclosure of such information. It cannot be excluded that we do not have, or cannot enforce, legal remedies that are effective at economically acceptable costs. Further, the violation of a non-disclosure agreement might be difficult to prove because business secrets and know- how may be developed independently by, or become otherwise known to, third parties. In addition, it may be difficult to quantify the damages which have occurred and to obtain legal remediation, or to undo the damages caused, by legal remedies. Our failure to effectively protect our business secrets and know-how could have material adverse effects on our business, prospects, financial condition and results of operations.

If our product candidates infringe or otherwise the rights of others, we could be subject to expensive litigation or be required to obtain licenses from others to develop or market them.

Our commercial success also depends upon our ability, and the ability of any third party with which we may partner, to develop, manufacture, market and sell our product candidates and/or products, if approved, and use our patent-protected technologies without infringing the patents of third parties. There is considerable patent litigation in the biotechnology and pharmaceutical industries. As the biopharmaceutical industry expands and more patents are issued, we face increased risks that there may be patents issued to third parties that relate to our product candidates and technology of which we are not aware or that we must challenge to continue our operations as currently contemplated.

Our competitors or others may have patent rights that they choose to assert against us or our licensees, suppliers, customers or potential collaborators. Moreover, we may not know about patents or patent applications that our products would infringe. For example, because patent applications do not publish for at least 18 months, if at all, and can take many years to issue, there may be currently pending applications unknown to us that may later result in issued patents that our product candidates would infringe. In addition, if third parties file patent applications or obtain patents claiming technology also claimed by us or our licensors in issued patents or pending applications, we may have to participate in interference proceedings in the U.S. Patent and Trademark Office to determine priority of invention. If third parties file oppositions in foreign countries, we may also have to participate in opposition proceedings in foreign tribunals to defend the patentability of our foreign patent applications.

If a third-party claims that we are infringing on its proprietary rights, any of the following may occur:

- we may become involved in time-consuming and expensive litigation, even if the claim is without merit;
- we may become liable for substantial damages for past infringement if a court decides that our technology infringes a competitor's patent;
- a court may prohibit us from selling or licensing our product without a license from the patent holder, which may not be available on commercially acceptable terms, if at all, or which may require us to pay substantial royalties or grant cross licenses to our patents; and
- we may have to redesign our product candidates or technology so that it does not infringe patent rights of others, which may not be possible or commercially feasible.

If any of these events occurs, our business and prospects will suffer and the market price of our common stock will likely decline substantially.

Obtaining and maintaining patent protection depends on compliance with various procedures and other requirements, and our patent protection could be reduced or eliminated in case of non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to the relevant patent agencies in several stages over the lifetime of the patents and /or applications. The relevant patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent application process. 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. However, there are situations in which the failure to comply with the relevant requirements can result in the 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, our competitors might be able to use our technologies and know-how which could have a material adverse effect on our business, prospects, financial condition and results of operation.

If we fail to comply with our obligations under our license agreements, we could lose the rights to intellectual property that is important to our business.

Our current license agreements impose on us various development obligations, payment of royalties and fees based on achieving certain milestones as well as other obligations. If we fail to comply with our obligations under these agreements, the licensor may have the right to terminate the license. In addition, if the licensor fails to enforce its intellectual property, the licensed rights may not be adequately maintained. The termination of any license agreements or failure to adequately protect such license agreements could prevent us from commercializing our product candidates or possible future products covered by the licensed intellectual property. Any of these events could materially adversely affect our business, prospects, financial condition and results of operation.

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

Our employees may have been previously employed at other companies in the industry, including our competitors or potential competitors. Although we are not aware of any claims currently pending against us, we may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of the former employers of our employees. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management. If we fail in defending such claims, in addition to paying money claims, we may lose valuable intellectual property rights or personnel. A loss of key personnel or their work product could hamper or prevent our ability to commercialize product(s), which would materially adversely affect our commercial development efforts.

The results of pre-clinical studies or early clinical trials are not necessarily predictive of future results, and our ultra-high potency albumin-binding drug conjugates may not have favorable results in later clinical trials or receive regulatory approval.

Success in pre-clinical studies and early clinical trials does not ensure that later clinical trials will generate adequate data to demonstrate the efficacy and safety of our ultra-high potency albumin-binding drug conjugates. A number of companies in the pharmaceutical and biotechnology industries, including those with greater resources and experience than we have, have suffered significant setbacks in clinical trials, even after seeing promising results in earlier clinical trials. We do not know whether the clinical trials we may conduct will demonstrate adequate efficacy and safety to result in regulatory approval to market them in any particular jurisdiction. If our clinical trials do not produce favorable results, our ability to achieve regulatory approval for these drug candidates will be adversely impacted and the value of our stock may decline.

The successful commercialization of our product candidates that are approved for marketing in the United States, if any, and/or any other products that we or our partners may commercialize in the future will likely depend, in-part, on the coverage and reimbursement policies of third-party payors, which, if unfavorable, could have a material adverse effect on our business.

The commercial success of our product candidates that are approved for marketing in the United States, if any, as well as any other products that we may or our partners may commercialize in the future, may depend, in significant part, on the extent to such products will be covered and reimbursed by third-party payors, including government healthcare programs, such as Medicare and Medicaid, private insurers, and managed care organizations. Patients for whom prescription drugs are prescribed and prescribing practitioners generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Without adequate coverage and reimbursement, patients and providers are unlikely to use or prescribe any products that we or our partners may commercialize or from which we may, otherwise, generate revenue in connection with commercial sales.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. In the United States, there is no uniform policy of coverage and reimbursement. Accordingly, third-party payors, including private insurers and governmental payors, such as Medicare and Medicaid, play an important role in determining the extent to which new drugs and biologics will be covered and reimbursed. The Medicare program covers certain individuals aged 65 or older, as well as certain people under 65 with disabilities and individuals suffering from end-stage renal disease. The Medicaid program, which varies from state-to-state, covers eligible individuals and families who have limited financial means. The Medicare and Medicaid programs are increasingly used as models for how private payors and other governmental payors develop their coverage and reimbursement policies for drugs and biologics. It is difficult to predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our product candidates and any other products we or our partners may commercialize or to which we may have commercialization rights or interests.

Third-party payors may deny coverage or reimbursement if they determine that a medical product was not used in accordance with cost-effective treatment methods, as determined by the third-party payor, and most, if not all, payors will deny coverage for products used or administered for an unapproved indication. Third-party payors also typically refuse to cover and reimburse for experimental procedures and devices. Furthermore, third-party payors are increasingly challenging the prices charged for medical products and services. And, the U.S. government and state legislatures have shown significant interest in implementing healthcare cost-containment programs, including price controls, restrictions on reimbursement, discount and rebate requirements, and requirements for substitution of generic products. Such measures, and the enactment of any more restrictive updates thereto and/or new measures could further limit our potential profitability and commercial success in connection with any products we or our partners may market in the United States. We cannot predict whether, or the extent to which, government and/or private payors will cover any products we or our partners may commercialize in the future, and there can be no assurances that such coverage and reimbursement levels, as applicable, will be sufficient to allow us to profit from the commercial sale of such product(s) in light of our costs from development and other related activities and any current or future arrangements with our development and/or commercialization partners.

Any products that we develop or are sold or licensed may become subject to unfavorable pricing regulations and/or third-party coverage and reimbursement policies, which could have a material adverse effect on our business.

Our product candidates are intended to be marketed primarily to hospitals, which generally receive reimbursement for the health care services they provide to their patients from third-party payors, such as Medicare, Medicaid and other domestic and international government programs, private insurance plans and managed care programs.

Such drugs will likely need to be administered under the supervision of a physician. Under currently applicable law, drugs that are not usually self-administered may be eligible for coverage by the Medicare program if:

- they are "incidental" to a physician's services;
- they are "reasonable and necessary" for the diagnosis or treatment of the illness or injury for which they are administered according to accepted standard of medical practice;
- they are not excluded as immunizations; and
- they have been approved by the FDA.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. In the United States, third-party payors, including private and governmental payors, such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs and biologics will be covered and reimbursed. The Medicare program covers certain individuals aged 65 or older, disabled or suffering from end-stage renal disease. The Medicaid program, which varies from state-to-state, covers certain individuals and families who have limited financial means. The Medicare and Medicaid programs increasingly are used as models for how private payors and other governmental payors develop their coverage and reimbursement policies for drugs and biologics. It is difficult to predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our product candidates.

Most third-party payors may deny coverage or reimbursement if they determine that a medical product was not used in accordance with cost-effective treatment methods, as determined by the third-party payor, or was used for an unapproved indication. Third-party payors also may refuse to cover and reimburse for experimental procedures and devices. Furthermore, because our programs are in the early stages of development, we are unable at this time to determine their cost-effectiveness and the level or method of reimbursement. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. If the price we are able to charge for any products we develop is inadequate in light of our development and other costs, our profitability could be adversely affected.

Healthcare legislative reform measures could hinder or prevent the commercial success of our products and product candidates.

In the United States, there have been, and we expect there will continue to be, a number of legislative and regulatory changes to the healthcare system that could affect our future revenues and profitability. Federal and state lawmakers regularly propose and, at times, enact legislation that results in significant changes to the healthcare system, some of which are intended to contain or reduce the costs of medical products and services. For example, in March 2010, the Patient Protection and Affordable Care Act (the "ACA"), as amended by the Health Care and Education Reconciliation Act, or collectively, the "Healthcare Reform Law," became law in the United States. It contains a number of provisions regarding health insurance, the provision of healthcare, conditions for reimbursement for healthcare services provided to Medicare and Medicaid patients, and other healthcare policy reforms. Through the law-making process, substantial changes have been and continue to be made to the current system for paying for healthcare in the United States, including changes made to extend medical benefits to certain Americans who lacked insurance coverage and changes made to contain or reduce healthcare costs (such as by reducing or conditioning reimbursement amounts for healthcare services and drugs, and imposing additional taxes, fees, and rebate obligations on pharmaceutical and medical device companies). The Healthcare Reform Law was one of the most comprehensive and significant reforms ever experienced by the United States in the healthcare industry and has significantly changed the way healthcare is financed by both governmental and private insurers. This legislation has impacted the scope of healthcare insurance and incentives for consumers and insurance companies, among others. Additionally, the Healthcare Reform Law's provisions were designed to encourage providers to find cost savings in their clinical operations. Pharmaceuticals represent a significant portion of the cost of providing care. This environment has caused changes in the purchasing habits of consumers and providers and resulted in specific attention to the pricing negotiation, product selection and utilization review surrounding pharmaceuticals. This attention may result in any products we may commercialize or promote in the future, and/or our therapeutic candidates, as applicable, being chosen less frequently or subject to substantially lowered pricing.

These structural changes could entail further modifications to the existing system of private payors and government programs (such as Medicare, Medicaid, and the State Children's Health Insurance Program), creation of government-sponsored healthcare insurance sources, or some combination of both, as well as other changes. Restructuring the coverage of medical care in the U.S. could impact the reimbursement for prescribed drugs and pharmaceuticals, including our current commercial products, those we and our development or commercialization partners are currently developing or those that we may commercialize or promote in the future. If reimbursement for the products we currently commercialize or promote, any product we may commercialize or promote, or approved therapeutic candidates is substantially reduced or otherwise adversely affected in the future, or rebate obligations associated with them are substantially increased, it could have a material adverse effect on our reputation, business, financial condition or results of operations.

Further, there has been heightened governmental scrutiny over the manner in which drug manufacturers set prices for their marketed products, which have resulted in several recent Congressional inquiries and proposed and enacted bills designed to, among other things, bring more transparency to prescription drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. In addition, the United States government, state legislatures, and foreign governments have shown significant interest in implementing drug cost containment programs, including price-controls, restrictions on reimbursement and requirements for substitution of generic products for branded prescription drugs to limit the growth of government paid health care costs. For example, the United States government has passed legislation requiring pharmaceutical manufacturers to provide rebates and discounts to certain entities and governmental payors to participate in federal healthcare programs. Further, Congress and the current administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs, and the current administration recently released a "Blueprint", or plan, to reduce the cost of drugs. The current administration's Blueprint contains certain measures that the U.S. Department of Health and Human Services is already working to implement. Individual states in the United States have also been increasingly passing legislation and implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

We anticipate there will continue to be proposals by legislators, at both the federal and state levels, regulators and commercial payers to reduce prescription drug costs while expanding individual healthcare benefits. Additional changes that may affect our business include those governing enrollment in federal healthcare programs, reimbursement changes, fraud and abuse enforcement, and expansion of new programs, such as Medicare payment for performance initiatives. The ultimate implementation of any healthcare reform legislation and any new laws and regulations, and its impact on us, is impossible to predict. Any significant reforms made to the healthcare system in the United States, or in other jurisdictions, may have an adverse effect on our business, financial condition, results of operations and prospects.

We may also be subject to federal and state healthcare laws and regulations relating to our current and/or future operations, and our failure to comply with those laws could adversely affect our business, operations and financial condition.

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be directly, or indirectly through our customers, subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute, the federal False Claims Act, and physician sunshine laws and regulations. These laws may impact, among other things, our proposed sales, marketing, and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs;
- the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false claims, or knowingly using false statements, to obtain payment from the federal government, and which may apply to entities that provide coding and billing advice to customers;
- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the federal physician sunshine requirements under the ACA, which requires manufacturers of drugs, devices, biologics, and medical supplies to report annually to the Centers for Medicare & Medicaid Services information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members;
- the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), as amended by the Health Information Technology for Economic and Clinical Health Act (“HITECH”), which governs the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. For instance, the California Consumer Privacy Act (the “CCPA”), became effective on January 1, 2020. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing and receive detailed information about how their personal information is used by requiring covered companies to provide new disclosures to California consumers (as that term is broadly defined) and provide such consumers new ways to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Although there are limited exemptions for clinical trial data and the CCPA’s implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future, the CCPA may increase our compliance costs and potential liability. Many similar privacy laws have been proposed at the federal level and in other states.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. In addition, the federal government has identified relationships between drug companies (and other medical-product manufacturers) and healthcare providers as particularly susceptible to fraud and abuse and, thus, our relationships may be subject to heightened regulatory scrutiny, particularly once we have one or more products on the U.S. market, if ever. Further, many of the applicable healthcare laws and regulations are subject to varying and/or evolving interpretations, which makes achieving and maintaining consistent compliance more difficult.

Achieving and sustaining compliance with these laws may prove costly. In addition, any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, the exclusion from participation in federal and state healthcare programs, imprisonment, or the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our financial results.

We will be required to pay substantial milestone and other payments relating to the commercialization of our products.

Aldoxorubicin

The agreement relating to our worldwide rights to aldoxorubicin provides for our payment of up to an aggregate of $7.5 million upon meeting specified clinical and regulatory milestones up to and including the product's second, final marketing approval. We also will be obliged to pay:

- commercially reasonable royalties based on a percentage of net sales (as defined in the agreement);
- a percentage of any non-royalty sub-licensing income (as defined in the agreement); and
- milestones of $1,000,000 for each additional final marketing approval that we might obtain.

Arimoclomol

The agreement relating to our worldwide rights to arimoclomol provides for our payment of up to an aggregate of $3.65 million upon receipt of milestone payments from Orphayzme A/S. On May 31, 2022, Orphazyme announced that it had completed the sale of substantially all of its assets and business activities for cash consideration of $12.8 million and assumption of liabilities estimated to equal approximately $5.2 million to KemPharm, a specialty biopharmaceutical company focused on the discovery and development of novel treatments for rare CNS diseases. As part of the KemPharm Transaction, all of Orphazyme's obligations to LadRx under the 2011 Arimoclomol Agreement, including with regard to milestone payments and royalties on sales, were assumed by KemPharm

Innovive

Under the merger agreement by which we acquired Innovive Pharmaceuticals, Inc. ("Innovive"), we agreed to pay the former Innovive stockholders a total of up to approximately $18.3 million of future earnout merger consideration, subject to our achievement of specified net sales under the Innovive license agreements. The earnout merger consideration, if any, will be payable in shares of our common stock, subject to specified conditions, or, at our election, in cash or by a combination of shares of our common stock and cash. Our common stock will be valued for purposes of any future earnout merger consideration based upon the trading price of our common stock at the time the earnout merger consideration is paid.

The COVID-19 pandemic and its ongoing effects could adversely impact our business and prospects, including active and planned clinical trials by ImmunityBio and KemPharm.

In December 2019, a novel strain of coronavirus, COVID-19, was first identified in China and has surfaced in several regions across the world. In March 2020, the disease was declared a pandemic by the World Health Organization. The COVID-19 pandemic has, from time to time, led to government-imposed quarantines, limitations on business activity and shelter-in-place mandates to mitigate or contain the virus, and has contributed to financial market volatility and uncertainty and significant disruptions in general commercial activity and the global economy.

As the COVID-19 pandemic and its ongoing effects continue to evolve, the companies which we are working to develop and commercialize our products, ImmunityBio and KemPharm, could be materially and adversely affected by the risks, or the public perception of the risks, related to the COVID-19 pandemic and its ongoing effects, which could cause delays in our potential timing of receipts of milestones and royalties within the disclosed time periods and expected costs. The disruptions to ImmunityBio and KemPharm could include:

- delays or difficulties in recruiting and enrolling new patients in their clinical trials;

- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as their clinical trial sites and hospital staff supporting the conduct of their clinical trials;
- interruption of key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel imposed or recommended by federal or state governments, employers and others;
- limitations in employee resources that would otherwise be focused on the conduct of their clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people;
- interruption in global shipping that may affect the transport of clinical trial supplies and materials, such as investigational drug product used in their clinical trials;
- delays in receiving approval from the FDA and local regulatory authorities to initiate their planned clinical trials;
- changes in FDA and local regulation as part of a response to the COVID-19 coronavirus outbreak which may change the ways in which clinical trials are conducted of discontinue clinical trials altogether;
- delays in necessary interactions with regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees;
- delay in the timing of other interactions with the FDA due to absenteeism by federal employees or by the diversion of their efforts and attention to approval of other therapeutics or other activities related to COVID-19; and
- refusal of the FDA to accept data from clinical trials in affected geographies outside the United States.

The extent to which the COVID-19 pandemic and its ongoing effects may impact our business and prospects will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration of the pandemic, new variants of the coronavirus, reinstatement of travel restrictions and social distancing in the United States and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease.

In the event of a dispute regarding our international drug development, it may be necessary for us to resolve the dispute in the foreign country of dispute, where we would be faced with unfamiliar laws and procedures.

The resolution of disputes in foreign countries can be costly and time consuming, similar to the situation in the United States. In a foreign country, we face the additional burden of understanding unfamiliar laws and procedures. We may not be entitled to a jury trial, as we might be in the United States. Further, to litigate in any foreign country, we would be faced with the necessity of hiring lawyers and other professionals who are familiar with the foreign laws. For these reasons, we may incur unforeseen expenses if we are forced to resolve a dispute in a foreign country.

Drug discovery is a complex, time-consuming and expensive process, and we may not succeed in creating new product candidates.

Conducting drug discovery and pre-clinical development of our albumin-binding technology is a complex and expensive process that will take many years. Accordingly, we cannot be sure whether or when our drug discovery and pre-clinical development activities will succeed in developing any new product candidates. In addition, any product candidates that we develop in pre-clinical testing may not demonstrate success in clinical trials required for marketing approval.

Any deficiency in the design, implementation or oversight of our drug discovery and pre-clinical testing programs could cause us to incur significant additional costs, experience significant delays, prevent us from obtaining marketing approval for any product candidate that may result from these programs or abandon development of certain product candidates. If any of these risks materializes, it could harm our business and cause our stock price to decline.

General Risk Factors

We are subject to intense competition, and we may not compete successfully.

Many companies, including large pharmaceutical and biotechnology firms with financial resources, research and development staffs, and facilities that may be substantially greater than those of ours or our strategic partners or licensees, are engaged in the research and development of pharmaceutical products that could compete with our potential products. To the extent that we seek to acquire, through license or otherwise, existing or potential new products, we will be competing with numerous other companies, many of which will have substantially greater financial resources and large acquisition staffs that may give those companies a competitive advantage over us in identifying and evaluating these drug acquisition opportunities. Any products that we acquire will be competing with products marketed by companies that in many cases will have substantially greater marketing resources than we have. The industry is characterized by rapid technological advances and competitors may develop their products more rapidly and such products may be more effective than those currently under development or that may be developed in the future by our strategic partners or licensees. Competitive products for a number of the disease indications that we have targeted are currently being marketed by other parties, and additional competitive products are under development and may also include products currently under development that we are not aware of or products that may be developed in the future.

As a result, these competitors may:

- succeed in developing competitive products sooner than us or our strategic partners or licensees;
- obtain FDA or foreign governmental approvals for their products before we can obtain approval of any of our products;
- obtain patents that block or otherwise inhibit the development and commercialization of our product candidate;
- develop products that are safer or more effective than our products;
- devote greater resources than us to marketing or selling products;
- introduce or adapt more quickly than us to new technologies and other scientific advances;
- introduce products that render our products obsolete;
- withstand price competition more successfully than us or our strategic partners or licensees;
- negotiate third-party strategic alliances or licensing arrangements more effectively than us; and
- take better advantage than us of other opportunities.

We are subject to potential liabilities from clinical testing and future product liability claims.

If any of our products are alleged to be defective, they may expose us to claims for personal injury by patients in clinical trials of our products or, if we obtain marketing approval and commercialize our products, by patients using our commercially marketed products. Even if one or more of our products is approved by the FDA, users may claim that such products caused unintended adverse effects. We maintain clinical trial insurance for our ongoing clinical trials, and we plan to seek to obtain similar insurance for any other clinical trials that we conduct. We also would seek to obtain product liability insurance covering the commercial marketing of our product candidates. We may not be able to obtain additional insurance, however, and any insurance obtained by us may prove inadequate in the event of a claim against us. Any claims asserted against us also may divert management’s attention from our operations, and we may have to incur substantial costs to defend such claims even if they are unsuccessful.

We may be unable to successfully acquire additional technologies or products. If we require additional technologies or products, our product development plans may change and the ownership interests of our stockholders could be diluted.

We may seek to acquire additional technologies by licensing or purchasing such technologies, or through a merger or acquisition of one or more companies that own such technologies. We have no current understanding or agreement to acquire any technologies, however, and we may not be able to identify or successfully acquire any additional technologies. We also may seek to acquire products from third parties that are already being marketed or have been approved for marketing, although we have not currently identified any of these products. We do not have any prior experience in acquiring or marketing products approved for marketing and may need to find third parties to market any products that we might acquire.

We have focused our product development efforts on our oncology and neurodegenerative drug candidates, which we believe have the greatest revenue potential. If we acquire additional technologies or product candidates, we may determine to make further changes to our product development plans and business strategy to capitalize on opportunities presented by the new technologies and product candidates.

We may determine to issue shares of our common stock to acquire additional technologies or products or in connection with a merger or acquisition of another company. To the extent we do so, the ownership interest of our stockholders will be diluted accordingly.

The impact and results of our exploration of any strategic alternatives are uncertain and may not be successful.

From time to time, we may consider strategic alternatives available to us to enhance shareholder value. Strategic alternatives could include acquisition transactions and/or strategic partnerships with one or more parties, the licensing of some of our proprietary technologies, or other possible transactions. Any strategic transaction that is completed ultimately may not deliver the anticipated benefits or enhance shareholder value. Further, we may devote a significant amount of our management resources to such a transaction, which could negatively impact our operations. We may incur significant costs in connection with seeking certain acquisitions or other strategic opportunities regardless of whether the transaction is completed, which could materially and adversely affect our liquidity and capital resources. In the event that we consummate an acquisition or strategic alternative in the future, there is no assurance that we would fully realize the potential benefits of such a transaction. Integration may be difficult and unpredictable, and acquisition-related integration costs, including certain non-recurring charges, could materially and adversely affect our results of operations. Moreover, integrating assets and businesses may significantly burden management and internal resources, including the potential loss or unavailability of key personnel. If we fail to successfully integrate any assets and businesses we acquire, we may not fully realize the potential benefits we expect, and our operating results could be adversely affected. If we pay for an acquisition in cash, it would reduce our cash available for operations or cause us to incur additional debt, and if we pay with our stock it could be dilutive to our stockholders.

We rely significantly on information technology and any failure, inadequacy, interruption or security lapse of that technology, including any cybersecurity incidents, could harm our ability to operate our business effectively.

We rely significantly on information technology and any failure, inadequacy, interruption or security lapse of that technology, including any cybersecurity incidents, could harm our ability to operate our business effectively. We maintain sensitive data pertaining to our Company on our computer networks, including information about our development activities, our intellectual property and other proprietary business information. Our internal computer systems and those of third parties with which we contract may be vulnerable to damage from cyber-attacks, computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures, despite the implementation of security measures. System failures, accidents or security breaches could cause interruptions to our operations, including material disruption of our development activities, result in significant data losses or theft of our intellectual property or proprietary business information, and could require substantial expenditures to remedy. 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 confidential or proprietary information, we could incur liability and our development programs could be delayed, any of which would harm our business and operations.

Our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Natural disasters could severely disrupt our operations or the operations of manufacturing facilities and have a material adverse effect on our business, financial condition, results of operations and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as manufacturing facilities, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place currently are limited and may not prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Global, market and economic conditions may negatively impact our business, financial condition and share price.

Concerns over inflation, geopolitical issues, the U.S. financial markets, foreign exchange rates, capital and exchange controls, unstable global credit markets and financial conditions and the COVID-19 pandemic and its ongoing effects, have led to periods of significant economic instability, declines in consumer confidence and discretionary spending, diminished expectations for the global economy and expectations of slower global economic growth going forward, and increased unemployment rates. Our general business strategy may be adversely affected by any such economic downturns, volatile business environments and continued unstable or unpredictable economic and market conditions. If these conditions continue to deteriorate or do not improve, it may make any necessary debt or equity financing more difficult to complete, more costly, and more dilutive. In addition, there is a risk that one or more of our current or future service providers and other partners could be negatively affected by difficult economic times, which could adversely affect our ability to attain our operating goals on schedule and on budget or meet our business and financial objectives.

In addition, we face several risks associated with international business and are subject to global events beyond our control, including war, public health crises, such as pandemics and epidemics, trade disputes, economic sanctions, trade wars and their collateral impacts and other international events. Any of these changes could have a material adverse effect on our reputation, business, financial condition or results of operations. There may be changes to our business if there is instability, disruption or destruction in a significant geographic region, regardless of cause, including war, terrorism, riot, civil insurrection or social unrest; and natural or man-made disasters, including famine, flood, fire, earthquake, storm or disease. In February 2022, armed conflict escalated between Russia and Ukraine. The sanctions announced by the United States and other countries, following Russia's invasion of Ukraine against Russia to date include restrictions on selling or importing goods, services or technology in or from affected regions, travel bans and asset freezes impacting connected individuals and political, military, business and financial organizations in Russia. The United States and other countries could impose wider sanctions and take other actions should the conflict further escalate. It is not possible to predict the broader consequences of this conflict, which could include further sanctions, embargoes, regional instability, geopolitical shifts and adverse effects on macroeconomic conditions, currency exchange rates and financial markets, all of which could impact our business, financial condition and results of operations.

We may be subject to inflationary risk

The Company does not believe that inflation has had a material effect on its operations to date, other than the impact of inflation on the general economy. However, there is a risk that the Company's operating costs could become subject to inflationary pressures in the future, which would have the effect of increasing the Company's operating costs, and which would put additional stress on the Company's working capital resources.

We may not be successful in hiring and retaining key employees, which may harm our business.

Our business is highly dependent upon the continued services of our senior management and key personnel. As such, our future success depends on our ability to identify, attract, hire or engage, retain, and motivate well-qualified personnel. Our operations require qualified personnel with expertise in pharmaceutical development and clinical research. We must compete for qualified individuals with numerous companies, universities, and other research institutions. Competition for such individuals is intense, and, when the need arises, we may not be able to hire the personnel necessary to support our efforts. There can be no assurance that these professionals will be available in the market, or that we will be able to retain existing professionals or to meet or to continue to meet their compensation requirements.

An overall tightening and increasingly competitive labor market in the U.S. employment market generally, especially in response to the COVID-19 pandemic, has been observed in the United States. Sustained labor shortage or increased turnover rates within our employee base, caused by the COVID-19 pandemic or as a result of general macroeconomic factors, could lead to increased costs, such as increased overtime to meet demand and increased wage rates to attract and retain employees, and could negatively affect our ability to efficiently operate and our overall business. If we are unable to hire and retain employees capable of performing at a high-level, or if mitigation measures we may take to respond to a decrease in labor availability, such as third-party outsourcing have unintended negative effects, our business could be adversely affected. An overall labor shortage, lack of skilled labor, increased turnover or labor inflation, caused by the COVID-19 pandemic or as a result of general macroeconomic factors, could have a material adverse impact on our operations, results of operations, liquidity or cash flows.

You may experience future dilution as a result of future equity offerings or other equity issuances.

To raise additional capital, we may in the future offer additional shares of our common stock, preferred stock or other securities convertible into or exchangeable for our common stock. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share that you may have paid for any of such securities that you currently hold. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share that you may have paid for previously for shares of our common stock. To the extent we raise additional capital by issuing equity securities or obtaining borrowings convertible into equity, ownership dilution to existing stockholders may result and future investors may be granted rights superior to those of existing stockholders.

Our outstanding options, warrants, convertible preferred shares, preferred investment option and the availability for resale of the underlying shares may adversely affect the trading price of our common stock.

As of December 31, 2022, we had outstanding stock options to purchase 17,651 shares of our common stock at a weighted-average exercise price of $683.00 per share and outstanding warrants to purchase 42 shares of common stock at a weighted-average exercise price of $3,360.00 per share. In addition, as of December 31, 2022, there are 2,752 shares of Series C Preferred Stock outstanding that can be converted into 31,277 shares of common stock, as well as preferred investment options that can be exercised for up to 113,636 shares of common stock at an exercise price of $88.00 per share. These outstanding convertible instruments could adversely affect our ability to obtain future financing or engage in certain mergers or other transactions, since the holders of these outstanding securities can be expected to exercise or convert them (as applicable) at a time when we may be able to obtain additional capital through a new offering of securities on terms more favorable to us than the terms of these outstanding convertible instruments. For the life of these outstanding convertible instruments, the holders have the opportunity to profit from a rise in the market price of our common stock without assuming the risk of ownership. The issuance of shares upon the exercise or conversion (as applicable) of these outstanding convertible instruments will also dilute the ownership interests of our existing stockholders. Many of our outstanding warrants contain anti-dilution provisions pertaining to dividends with respect to our common stock. In the event that these anti-dilution provisions are triggered by us in the future, we would likewise be required to reduce the exercise price or conversion price (as applicable), and increase the number of shares underlying those convertible instruments, which would have a dilutive effect on our stockholders.

We have registered with the SEC the resale by the holders of some of the shares of our common stock issuable upon exercise or conversion (as applicable) of our outstanding convertible instruments. The availability of these shares for public resale, as well as actual resales of these shares, could adversely affect the trading price of our common stock.

On July 27, 2022, at our 2022 Annual Meeting of Stockholders (the “2022 Annual Meeting”), our stockholders approved a proposal to authorize the Board, in its discretion but prior to July 26, 2023, to amend the Company’s Restated Certificate of Incorporation to effect a reverse stock split of all of the outstanding shares of the Company’s Common Stock, at a ratio in the range of 1-for-2 to 1-for-100, with such ratio to be determined by the Board, and all outstanding shares of Series D Preferred Stock were automatically redeemed. As a result, no shares of Series D Preferred Stock remain outstanding. The stock split is not yet effective as of the date of this filing.

We cannot assure investors that our internal controls will prevent future material weaknesses.

Section 404 of the Sarbanes-Oxley Act requires, among other things, that we maintain effective internal controls for financial reporting and disclosure controls and procedures. We are required to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. This assessment needs to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting.

There can be no assurance that we will not suffer from material weaknesses in the future. If we fail to remediate these material weaknesses or fail to otherwise maintain effective internal controls over financial reporting in the future, such failure could result in a material misstatement of our annual or quarterly consolidated financial statements that would not be prevented or detected on a timely basis and which could cause investors and other users to lose confidence in our consolidated financial statements, limit our ability to raise capital and have a negative effect on the trading price of our common stock. Additionally, failure to remediate the material weaknesses or otherwise failing to maintain effective internal controls over financial reporting may also negatively impact our operating results and financial condition, impair our ability to timely file our periodic and other reports with the SEC, subject us to additional litigation and regulatory actions and cause us to incur substantial additional costs in future periods relating to the implementation of remedial measures.

We are, and may in the future be, subject to legal proceedings in the ordinary course of our business. In addition, as a public company, we will be at an increased risk of securities class action litigation.

From time to time, we may be involved in legal proceedings that arise in the ordinary course of business. Claims arising out of actual or alleged violations of law could be asserted against us by individuals, either individually or through class actions, by governmental entities in civil or criminal investigations and proceedings or by other parties. These claims could be asserted under a variety of laws, including but not limited to consumer finance laws, consumer protection laws, intellectual property laws, privacy laws, labor and employment laws, securities laws and employee benefit laws. These actions could expose us to adverse publicity and to substantial monetary damages and legal defense costs, injunctive relief and criminal and civil fines and penalties, including, but not limited to suspension or revocation of licenses to conduct business.

On November 30, 2022, Jerald Hammann ("Hammann") filed a complaint (the "Complaint") against the Company, Mr. Caloz, and Mr. Kriegsman (together, "Defendants") in the Court of Chancery of the State of Delaware, alleging various violations of a Cooperation Agreement, dated August 21, 2020, by and between the Company and Hammann. The Complaint alleges breaches of a provision limiting the Board's ability to effect discretionary compensation and a non-disparagement provision. The Complaint further alleges a breach of a purported implied obligation that the Company disclose various internal records to Hammann. Defendants believe the Complaint is wholly without merit and have moved to dismiss the Complaint in its entirety. Hammann has opposed the motion to dismiss and briefing of the motion is ongoing. Defendants intend to litigate vigorously against Hammann's claims.

In addition, securities-related class action and derivative lawsuits have often been brought against companies, including many biotechnology companies, which experience volatility in the market price of their securities. This risk is especially relevant for biotechnology and biopharmaceutical companies such as ours, which often experience significant stock price volatility in connection with their product development programs.

As any litigation progresses, we may be subject to legal fees and other litigation expenses incurred up to the application retention, or deductible, amounts under our insurance policies, including our director's and officer's and other liability insurance policies, and the insurance may not be sufficient to cover all of the liabilities that we may incur in connection with the pending or possible future legal actions. As a result, any future legal actions may adversely affect out financial condition.

Our anti-takeover measures may make it more difficult to change our management, or may discourage others from acquiring us, and thereby adversely affect stockholder value.

We have a stockholder rights plan and provisions in our amended and restated by-laws (as amended, the "By-Laws") that are intended to protect our stockholders' interests by encouraging anyone seeking control of our company to negotiate with our Board. These provisions may discourage or prevent a person or group from acquiring us without the approval of our Board, even if the acquisition would be beneficial to our stockholders.

We have a classified Board, which means that at least two stockholder meetings, instead of one, will be required to effect a change in the majority control of our Board. This applies to every election of directors, not just an election occurring after a change in control. The classification of our Board increases the amount of time it takes to change majority control of our Board and may cause potential acquirers to lose interest in a potential purchase of us, regardless of whether our purchase would be beneficial to us or our stockholders. The additional time and cost to change a majority of the members of our Board makes it more difficult and may discourage our existing stockholders from seeking to change our existing management in order to change the strategic direction or operational performance of our company.

At our 2022 Annual Meeting, a proposal (the "Declassification Proposal") to declassify the structure of the Board was passed on a precatory basis, which advised the Board that a majority of our stockholders desired to end the classified Board structure in favor of the annual election of directors, in which each director standing for election will only be eligible to be elected for one-year terms. The Board plans to adopt a resolution approving and declaring the advisability of amending our governing documents to the extent necessary to remove provisions that provide for a classified Board, subject to approval by our stockholders at the 2023 annual meeting of the stockholders. If passed, such a proposal would provide for a rolling declassification of the Board to be completed by the 2026 annual meeting of the stockholders.

Our By-Laws provide that directors may only be removed for cause by the affirmative vote of the holders of at least a majority of the outstanding shares of our capital stock then entitled to vote at an election of directors. This provision prevents stockholders from removing any incumbent director without cause. Our By-Laws also provide that a stockholder must give us not fewer than 120 days but not more than 150 days' notice of a proposal or director nomination that such stockholder desires to present at any annual meeting or special meeting of our stockholders. Such provision prevents a stockholder from making a proposal or director nomination at a stockholder meeting without us having advance notice of that proposal or director nomination. This could make a change in control more difficult by providing our directors with more time to prepare an opposition to a proposed change in control. By making it more difficult to remove or install new directors, these By-Law provisions may also make our existing management less responsive to the views of our stockholders with respect to our operations and other issues such as management selection and management compensation.

We are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, which may also prevent or delay a takeover of us that may be beneficial to our stockholders.

Our By-Laws, as amended, designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Our By-Laws provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, or (iv) any action asserting a claim that is governed by the internal affairs doctrine. Any person purchasing or otherwise acquiring any interest in any shares of our capital stock shall be deemed to have notice of and to have consented to this provision of our By-Laws. This choice-of-forum provision may limit our stockholders' ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits. Alternatively, if a court were to find this provision of our amended and restated By-Laws inapplicable or unenforceable with respect to one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business and financial condition.

The Series C Certificate of Designation contains covenants that could limit our financing options and liquidity position, which would limit our ability to grow our business.

Covenants in the Certificate of the Designations, Powers, Preferences and Rights of Series C 10.00% Convertible Preferred Stock (the "Series C Certificate of Designation") for our Series C 10.00% Convertible Preferred Stock (the "Series C Preferred Stock") impose operating and financial restrictions on us. These restrictions prohibit or limit our ability to, among other things:

- pay cash dividends to our stockholders, subject to certain limited exceptions;
- redeem or repurchase our common stock or other equity; or
- issue any classes of stock senior to the Series C Preferred Stock in right of dividends, redemption or distribution of assets upon certain liquidation events.

These restrictions may limit our ability to obtain additional financing, withstand downturns in our business or take advantage of business opportunities. As of March 20, 2023, there were 1,410 shares of Series C Preferred Stock issued and outstanding.

We may issue additional classes of preferred stock in the future, and the terms of the preferred stock may reduce the value of our common stock.

We are authorized to issue shares of preferred stock in one or more series. In the past, we have issued shares of preferred stock, including shares of our Series C Preferred Stock in 2021. Our Board may determine the terms of future preferred stock offerings without further action by our stockholders. If we issue preferred stock, it could affect your rights or reduce the value of our outstanding common stock. In particular, specific rights granted to future holders of preferred stock may include voting rights, preferences as to dividends and liquidation, conversion and redemption rights, sinking fund provisions, and restrictions on our ability to merge with or sell our assets to a third party.

We do not expect to pay any cash dividends on our common stock.

We have not declared or paid any cash dividends on our common stock or other securities, and we currently do not anticipate paying any cash dividends in the foreseeable future. Because we do not anticipate paying cash dividends for the foreseeable future, our stockholders will not realize a return on their investment in our common stock except to the extent of any appreciation in the value of our common stock. Our common stock may not appreciate in value, or it may decline in value.

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

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change,” the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes (such as research and development tax credits) to offset its post-change income and taxes may be limited. In general, an “ownership change” occurs if there is a cumulative change in our ownership by “5% shareholders” that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. As a result of a previous ownership change, our annual utilization of approximately $67.6 million in federal net operating loss carryforwards became substantially limited. If we experience ownership changes as a result of future transactions in our stock, we may be further limited in our ability to use our net operating loss carryforwards and other tax assets to reduce taxes owed on the net taxable income that we earn. Any such limitations on the ability to use our net operating loss carryforwards and other tax assets could potentially result in increased future tax liability to us on any net income that we may earn in the future.

Risks Related to this Offering

You will experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase in this offering.

The effective public offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering, in which case you may incur an immediate and substantial dilution in the net tangible book value of the shares of common stock you purchase in this offering or the shares of common stock underlying the Warrants you purchase in this offering. After giving effect to the sale by us of (i) shares of our common stock and accompanying Warrants to purchase shares of our common stock at the public offering price of $[ ] per Unit, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, you will experience immediate dilution of $[ ] per share, representing the difference between the effective public offering price per share and our pro forma as adjusted net tangible book value per share as of December 31, 2022 after giving effect to this offering. The exercise of Warrants issued in this offering, exercise of outstanding stock options and vesting of other stock awards may result in further dilution of your investment. See “Dilution” on page 41 of this prospectus for a more detailed discussion of the dilution you will incur if you participate in this offering.

In addition, as of March 20, 2023, we had outstanding options to acquire 17,651 shares of our common stock, outstanding warrants to acquire 42 shares of our common stock, preferred investment options to acquire 113,636 shares of our common stock and 1,410 shares of Series C Preferred Stock, convertible into 16,027 shares of our common stock. The issuance of shares of our common stock upon exercise of the stock options or warrants could result in dilution to the interests of other holders of our common stock and could adversely affect our stock price.

Substantial future sales or other issuances of our common stock could depress the market for our common stock.

Sales of a substantial number of shares of our common stock, or the perception by the market that those sales could occur, could cause the market price of our common stock to decline or could make it more difficult for us to raise funds through the sale of equity in the future.

Future issuances of our common stock or our other equity securities could further depress the market for our common stock. We expect to continue to incur costs associated with our research and development programs, such as preclinical studies, clinical trials, and the regulatory approval process for therapeutic candidates, and general and administrative costs associated with our operations, and costs to satisfy our funding requirements, we may therefore need to sell additional equity securities. The sale or the proposed sale of substantial amounts of our common stock or our other equity securities may adversely affect the market price of our common stock and our stock price may decline substantially. Our stockholders may experience substantial dilution and a reduction in the price that they are able to obtain upon sale of their shares. New equity securities issued may have greater rights, preferences or privileges than our existing common stock.

Even if we obtain approval to list our securities, Nasdaq may subsequently delist our securities from its exchange, which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.

While we intend to apply to list our common stock and the Warrants on Nasdaq following under the trading symbols "LADX" and "LADX-W, respectively, we cannot assure you that our securities will be or will continue to be listed on Nasdaq.

If our common stock is listed on Nasdaq, in order to remain listed on Nasdaq, we will be required to meet the continued listing requirements of Nasdaq or any other U.S. or nationally recognized stock exchange to which we may apply and be approved for listing. We may be unable to satisfy these continued listing requirements, and there is no guarantee that our common stock will remain listed on Nasdaq or any other U.S. or nationally recognized stock exchange. If, after listing, our common stock is delisted from Nasdaq or any other U.S. or nationally recognized stock exchange, we could face significant material adverse consequences, including:

- a limited availability of market quotations for our securities;
- reduced liquidity with respect to the market for our common stock;
- a determination that our common stock is a "penny stock," which would require brokers trading in our common stock to adhere to more stringent rules, possibly resulting in a reduced level of trading activity in the secondary trading market for our common stock;
- a limited amount of news and analyst coverage for us; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

We have broad discretion in the use of the net proceeds of this offering and, despite our efforts, we may use the net proceeds in a manner that does not increase the value of your investment.

Our management will have broad discretion in the application of our existing cash and the net proceeds from this offering, including for any of the purposes described in the section titled "Use of Proceeds" on page 39, and you will not have the opportunity as part of your investment decision to assess whether such proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of our existing cash and the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management might not apply our existing cash and the net proceeds from this offering in ways that ultimately increase the value of your investment. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may in the future offer additional common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

We are a "smaller reporting company" under the SEC's disclosure rules and have elected to comply with the reduced disclosure requirements applicable to smaller reporting companies.

We are a "smaller reporting company" under the SEC's disclosure rules, meaning that we have either:

- a public float of less than $250 million; or
- annual revenues of less than $100 million during the most recently completed fiscal year; and
- no public float; or
- a public float of less than $700 million.

As a smaller reporting company, we are permitted to comply with scaled-back disclosure obligations in our SEC filings compared to other issuers, including with respect to disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We have elected to adopt the accommodations available to smaller reporting companies. Until we cease to be a smaller reporting company, the scaled-back disclosure in our SEC filings will result in less information about our company being available than for other public companies.

If investors consider our common stock less attractive as a result of our election to use the scaled-back disclosure permitted for smaller reporting companies, there may be a less active trading market for our common stock and our share price may be more volatile.

As a non-accelerated filer, we are not required to comply with the auditor attestation requirements of the Sarbanes-Oxley Act.

We are a non-accelerated filer under the Securities Exchange Act of 1934, as amended, (the "Exchange Act"), and we are not required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act of 2002. Therefore, our internal controls over financial reporting will not receive the level of review provided by the process relating to the auditor attestation included in annual reports of issuers that are subject to the auditor attestation requirements. In addition, we cannot predict if investors will find our common stock less attractive because we are not required to comply with the auditor attestation requirements. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and trading price for our common stock may be negatively affected.

Our stock price may be volatile.

The market price of our common stock is likely to be highly volatile and could fluctuate widely in price in response to various factors, many of which are beyond our control, including the following:

- changes in our industry;
- competitive pricing pressures;
- our ability to obtain working capital financing;
- additions or departures of key personnel;
- conversions from preferred stock to common stock;
- sales of our common and preferred stock;
- our ability to execute our business plan;
- operating results that fall below expectations;

- loss of any strategic relationship;
- regulatory developments; and
- economic and other external factors.

In addition, the securities markets have from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. These market fluctuations may also materially and adversely affect the market price of our common stock.

If our common stock is listed on Nasdaq, we will incur materially increased costs and become subject to additional regulations and requirements.

If our common stock is listed on Nasdaq, as a newly exchange-listed public company, we will incur material additional legal, accounting and other expenses, including payment of annual exchange fees, to satisfy the continued listing standards for Nasdaq. If our common stock is listed on Nasdaq, we must meet certain financial and liquidity criteria to maintain our listing. If we fail to meet any of Nasdaq's listing standards, our common stock may be delisted. In addition, our Board may determine that the cost of maintaining our listing on a national securities exchange outweighs the benefits of such listing. A delisting of our common stock from Nasdaq may materially impair our stockholders' ability to buy and sell our common stock and could have an adverse effect on the market price of, and the efficiency of the trading market for, our common stock. The delisting of our common stock could significantly impair our ability to raise capital and the value of your investment.

Risks Related to Our Intended Reverse Stock Split

Even if the reverse stock split achieves the requisite increase in the market price of our common stock, we cannot assure you that we will be able to continue to comply with the minimum bid price requirement of Nasdaq.

Even if the reverse stock split (the "Reverse Stock Split") achieves the requisite increase in the market price of our common stock to be in compliance with the minimum bid price of Nasdaq, there can be no assurance that the market price of our common stock following the reverse stock split will remain at the level required for continuing compliance with that requirement. It is not uncommon for the market price of a company's common stock to decline in the period following a reverse stock split. If the market price of our common stock declines following the effectuation of the Reverse Stock Split, the percentage decline may be greater than would occur in the absence of a reverse stock split. In any event, other factors unrelated to the number of shares of our common stock outstanding, such as negative financial or operational results, could adversely affect the market price of our common stock and jeopardize our ability to meet or maintain Nasdaq's minimum bid price requirement.

The Reverse Stock Split may decrease the liquidity of the shares of our common stock.

The liquidity of the shares of our common stock may be affected adversely by the Reverse Stock Split given the reduced number of shares that will be outstanding following the Reverse Stock Split, especially if the market price of our common stock does not increase as a result of the Reverse Stock Split. In addition, the reverse stock split may increase the number of shareholders who own odd lots (less than 100 shares) of our common stock, creating the potential for such shareholders to experience an increase in the cost of selling their shares and greater difficulty effecting such sales.

Following the Reverse Stock Split, the resulting market price of our common stock may not attract new investors, including institutional investors, and may not satisfy the investing requirements of those investors. Consequently, the trading liquidity of our common stock may not improve.

Although we believe that a higher market price of our common stock may help generate greater or broader investor interest, there can be no assurance that the Reverse Stock Split will result in a share price that will attract new investors, including institutional investors. In addition, there can be no assurance that the market price of our common stock will satisfy the investing requirements of those investors. As a result, the trading liquidity of our common stock may not necessarily improve.

Risks Related to Our Warrants

Our Warrants have no prior trading history and an active market may not develop, which may limit the ability of our investors to sell Warrants.

There is no public market for our Warrants. Although we intend to apply to have the Warrants listed on Nasdaq, an active trading market for the Warrants may never develop or may not be sustained even if one develops. If an active market for the Warrants does not develop, it may be difficult to sell the Warrants.

Holders of Warrants purchased in this offering will have no rights as common stockholders until such holders exercise their Warrants and acquire our common stock, except as set forth in the Warrants.

Until holders of Warrants acquire our common stock upon exercise of the Warrants, such holders will have no rights with respect to the shares of common stock underlying the Warrants, except as set forth in the Warrants. Upon exercise of the Warrants, the holders will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date. Accordingly, the Warrants do not confer any rights of common stock ownership on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire shares of our common stock at a fixed price for a limited period of time.

The Warrants are speculative in nature.

Holders of the Warrants may exercise their right to acquire the shares of common stock and pay an exercise price of $[ ] per share of common stock, subject to certain adjustments, commencing immediately upon issuance for a [ ]-year period, after which period any unexercised Warrants will expire and have no further value. Moreover, following this offering, the market value of the Warrants, if any, is uncertain and there can be no assurance that the market value of the Warrants will equal or exceed their imputed offering price. The Warrants will not be listed or quoted for trading on any market or exchange. There can be no assurance that the market price of our common stock will ever equal or exceed the exercise price of the Warrants, and consequently, it may not ever be profitable for holders of the Warrants to exercise the Warrants.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately $[ ] million, or approximately $[ ] million if the underwriters exercise their over-allotment option in full, based on an assumed public offering price of $[ ] per Unit, after deducting underwriting discounts and estimated offering expenses payable by us. These estimates exclude the proceeds, if any, from the exercise of the Warrants sold in this offering.

We intend to use the net proceeds of this offering for the development of our LADR assets and for working capital and other general corporate purposes.

The expected use of net proceeds of this offering represents our current intentions based upon our present plan and business conditions. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering. We will have broad discretion in the application of the net proceeds in the category of “for general corporate purposes,” and investors will be relying on our judgment regarding the application of the proceeds of this offering. Depending on the outcome of our business activities and other unforeseen events, our plans and priorities may change and we may apply the net proceeds of this offering in different proportions than we currently anticipate.

DIVIDEND POLICY

We have not paid and do not expect to declare or pay any cash dividends on our common stock in the foreseeable future. We currently expect to retain all future earnings for use in the operation and expansion of our business. The declaration and payment of any cash dividends in the future will be determined by our Board in its discretion, and will depend on a number of factors, including our earnings, capital requirements, overall financial condition and contractual restrictions, if any.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of December 31, 2022:

- on an actual basis;
- on a pro forma basis, after giving effect to the issuance of 31,273 shares of common stock issued pursuant to the conversion of 2,752 shares of Series C Preferred Stock(the "Pro Forma Adjustments"); and
- on an pro forma as adjusted basis to give effect to our issuance and sale of the Units in this offering at an assumed public offering price of $[ ] per Unit, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

This table should be read in conjunction with "Use of Proceeds" on page 39, "Management's Discussion and Analysis of Financial Condition and Results of Operations" on page 57, and our historical financial statements and related notes thereto appearing elsewhere in this prospectus.

	As of December 31, 2022		
	Actual	Pro Forma	Pro forma as adjusted
Cash and cash equivalents	$ 1,374,992		$ []
Capitalization			
Preferred Stock ,Series C 10% Convertible, $1,000 par value, 2,752 and 8,240 shares issued and outstanding at a December 31, 2022 and 2021, respectively	1,343,684	—	[ ]
Stockholders' Equity			
Preferred Stock, $0.01 par value, 833,333 shares authorized, including 50,000 shares of Series B Junior Participating Preferred Stock; no shares issued and outstanding	—	[ ]	[ ]
Common stock, $0.001 par value, 62,393,940 shares authorized; 450,374 and 387,800 shares issued and outstanding at December 31, 2022 and December 31, 2021, respectively	45,037		[ ]
Additional paid-in capital	487,474,664		[ ]
Accumulated deficit	(488,837,665)		[ ]
Accumulated other comprehensive loss	—	—	[ ]
Total Stockholders' Equity	(1,317,964)		[ ]
Total capitalization	$ 25,720		$ [ ]

Each $1.00 increase (decrease) in the assumed public offering price of $[ ] per Unit would increase (decrease) each of as adjusted additional paid-in capital, total deficiency and total capitalization by approximately $[ ] million, assuming the number of Units offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We may also increase or decrease the number of Units we are offering. An increase (decrease) of 1,000,000 in the number of Units we are offering would increase (decrease) each of as adjusted additional paid-in capital, total deficiency and total capitalization by approximately $[ ] million, based upon the assumed public offering price per Unit remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The as adjusted information is illustrative only, and we will adjust this information based on the actual public offering price and other terms of this offering determined at pricing.

The table and discussion above does not include the exercise of the Warrants offered and sold in this offering.

The number of shares of our common stock to be outstanding after this offering is based on 465,874 shares of our common stock outstanding as of December 31, 2022, and excludes:

- 17,651 shares reserved for issuance upon the exercise of outstanding stock options at a weighted average exercise price of $683.00 per share;
- 42 shares reserved for issuance upon the exercise of outstanding warrants at a weighted average exercise price of $3,360.00 per share;
- 113,636 shares reserved for issuance upon the exercise of outstanding preferred investment options at an exercise price of $88.00 per share;
- 16,027 shares reserved for issuance upon the conversion of 1,410 outstanding shares of Series C Preferred Stock at a conversion price of $88.00 per share; and
- [ ] shares of common stock issuable upon exercise of the Warrants issued in this offering.

All information included in this prospectus (other than in the historical financial statements included herein beginning at page F-1) has been adjusted to reflect an expected 1-for-100 reverse stock split to be effected following the effectiveness of the registration statement of which this prospectus forms a part and prior to the closing of this offering.

DILUTION

If you invest in our Units in this offering, your interest will be diluted to the extent of the difference between the public offering price per Unit and the as adjusted, net tangible book value per share of common stock immediately after this offering, assuming no value is attributed to the Warrants included in the Units. The historical net tangible book value of our common stock as of December 31, 2022 was $(1,317,694), or $(2.83) per share, based upon 465,874 shares of common stock outstanding as of such date. Net tangible book value per share of common stock represents our total tangible assets less our total liabilities, divided by the number of shares outstanding at December 31, 2022.

After giving effect to the Pro Forma Adjustments, our pro forma net tangible book value as of December 31, 2022 would have been approximately $(1,317,694), or $(2.83) per share of common stock.

After giving further effect to the receipt of the net proceeds from our sale of [ ] Units in this offering at an assumed public offering price of $[ ] per Unit, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, the pro forma as adjusted net tangible book value as of December 31, 2022 would have been $[ ] million, or $[ ] per share of common stock. This represents an immediate increase in pro forma as adjusted net tangible book value of $[ ] per share of common stock to existing stockholders and an immediate dilution of $[ ] per share of common stock, assuming no value is attributed to the Warrants included in the Units, to new investors purchasing Units in this offering. The final public offering price of the Units in this offering will be determined through negotiation between us and the underwriters in the offering, considering our historical performance and capital structure, prevailing market conditions and overall assessment of our business, and may be at a discount to the current market price. The recent market price of our common stock used throughout this prospectus may not be indicative of the final public offering price or of the prices at which our common stock may trade on Nasdaq in the future.

The following table illustrates this dilution on a per share basis to new investors (unaudited):

Assumed public offering price per Unit			$	[ ]
Net tangible book value per share of common stock at December 31, 2022	$	(2.83)		
Increase in net tangible book value per share attributable to the Pro Forma Adjustments	$	0		
Pro forma net tangible book value per share of common stock as of December 31, 2022	$	(2.83)		
Increase in pro forma net tangible book value per share of common stock attributable to purchasers in this offering	$	[ ]		
Pro forma as adjusted net tangible book value per share of common stock immediately after this offering	$	[ ]		
Dilution per share of common stock to new investors purchasing Units in this offering			$	[ ]

A $1.00 increase (decrease) in the assumed public offering price of $[ ] per Unit, would increase (decrease) the as adjusted net tangible book value, as adjusted to give effect to this offering, by approximately $[ ] million or $[ ] per share and would increase (decrease) the dilution to new investors by approximately $[ ] per share, assuming the number of Units offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We may also increase or decrease the number of Units we are offering. An increase of 1,000,000 in the number of Units offered by us would increase our as adjusted net tangible book value by approximately $[ ] million or $[ ] per share, and decrease the dilution per share to investors participating in this offering by $[ ] per share, assuming no value is attributed to the Warrants and the assumed public offering price per Unit remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Similarly, a decrease of 1,000,000 in the number of Units offered by us would decrease our as adjusted net tangible book value by approximately $[ ] million or $[ ] per share, and increase the dilution per share to investors participating in this offering by $[ ] per share, assuming no value is attributed to the Warrants and the assumed public offering price per Unit remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters exercise their option to purchase additional securities in full, the net tangible book value per share, as adjusted to give effect to this offering, would be $[ ] per share, and the dilution in net tangible book value per share to new investors in this offering would be $[ ] per share, assuming no value is attributed to the Warrants included in the Units.

The above table is based on 465,874 shares of our common stock outstanding as of December 31, 2022 and excludes:

- 17,651 shares reserved for issuance upon the exercise of outstanding stock options at a weighted average exercise price of $683.00 per share;
- 42 shares reserved for issuance upon the exercise of outstanding warrants at a weighted average exercise price of $3,360.00 per share;
- 113,636 shares reserved for issuance upon the exercise of outstanding preferred investment options at an exercise price of $88.00 per share;
- 16,027 shares reserved for issuance upon the conversion of 1,410 outstanding shares of Series C Preferred Stock at a conversion price of $88.00 per share; and
- [ ] shares of common stock issuable upon exercise of the Warrants issued in this offering.

All information included in this prospectus (other than in the historical financial statements included herein beginning at page F-1) has been adjusted to reflect an anticipated 1-for-100 reverse stock split to be effected following the effectiveness of the registration statement of which this prospectus forms a part and prior to the closing of this offering.

BUSINESS

Overview

LadRx is a biopharmaceutical research and development company specializing in oncology. The Company's focus is on the discovery, research and clinical development of novel anti-cancer drug candidates that employ novel technologies that target chemotherapeutic drugs to solid tumors and reduce off-target toxicities. During 2017, the Company's discovery laboratory in Freiburg, Germany synthesized and tested over 75 rationally designed drug candidates with highly potent anti-cancer payloads, culminating in the creation of two distinct classes of compounds. Four lead candidates (LADR-7 through LADR-10) were selected based on *in vitro* and animal studies in several different cancer models, and based on stability and manufacturing feasibility. In addition, a novel companion diagnostic, ACDx™, was developed to identify patients with cancer who are most likely to benefit from treatment with these drug candidates. However, the Company's research and development activities have been curtailed as they seek additional financing.

On June 1, 2018, the Company launched Centurion and transferred all of its assets, liabilities and personnel associated with the laboratory operations in Freiburg, Germany. In connection with said transfer, the Company and Centurion entered into a Management Services Agreement whereby the Company agreed to render advisory, consulting, financial and administrative services to Centurion, for which Centurion shall reimburse the Company for the cost of such services plus a 5% service charge. On December 21, 2018, LadRx announced that Centurion had concluded the pre-clinical phase of development for its four LADR™ drug candidates, and for its albumin companion diagnostic (ACDx™). As a result of completing this work, operations taking place at the pre-clinical laboratory in Freiburg, Germany were no longer needed and, accordingly, the lab was closed at the end of January 2019.

On March 9, 2022, Centurion merged with and into LadRx, with LadRx absorbing all of Centurion's assets and continuing after the Merger. The Merger was implemented through an agreement and plan of merger pursuant to Section 253 of the General Corporation Law of the State of Delaware and did not require approval from either our or Centurion's stockholders. The Certificate of Ownership merging Centurion into LadRx was filed with the Secretary of State of Delaware on March 9, 2022.

Effective September 26, 2022, the Company changed its name from CytRx Corporation to LadRx Corporation pursuant to a Certificate of Amendment to our Certificate of Incorporation filed with the Secretary of State of Delaware. In accordance with the General Corporation Law of the State of Delaware (the "DGCL"), its Board approved the name change and the Certificate of Amendment. Pursuant to Section 242(b)(1) of the DGCL, stockholder approval was not required for the name change or the Certificate of Amendment.

LadRx is a Delaware corporation, incorporated in 1985. Our corporate offices are located at 11726 San Vicente Boulevard, Suite 650, Los Angeles, California 90049, and our telephone number is (310) 826-5648. Our web site is located at www.ladrxcorp.com. We do not incorporate by reference into this prospectus the information on, or accessible through, our website, and you should not consider it as part of this prospectus.

LADR Drug Discovery Platform

The LADR Technology offers the opportunity for multiple pipeline drugs. The Company's LADR™ (Linker Activated Drug Release) technology platform consists of an organic backbone that is attached to a chemotoxic agent. The purpose of the LADR™ backbone is to first target and deliver the chemotoxic agent to the tumor environment, and then to release the chemotoxic agent within the tumor. By delivering, concentrating, and releasing the chemotoxic agent within the tumor, one expects to reduce the off-target side-effects of the chemotherapeutic, which in turn allows for several-fold higher dosing of the chemotherapeutic to the patient. Being small organic molecules, the Company expects LADR-based drugs to offer the benefits of targeting the tumor without the complexity, side effects, and expense inherent in macromolecules such as antibodies and nanoparticles.

The Company's LADR-based drugs use circulating albumin as the binding target and as the trojan horse to deliver the LADR™ drugs to the tumor. Albumin is the most abundant protein in plasma and accumulates inside tumors due to the aberrant vascular structure that exists within solid tumors. Tumors use albumin as a nutritional source and for transport of signaling and other molecules that are important to the maintenance and growth of the tumor, which makes albumin an excellent target for drugs that are intended for solid tumors.

The Company's LADR™ development efforts are focused on two classes of ultra-high potency albumin-binding drugs. These LADR-based drugs, LADR7, 8, 9, and 10, combine the proprietary LADR™ backbone with novel derivatives of the auristatin and maytansinoid drug classes. Auristatin and maytansinoid are highly potent chemotoxins and require targeting to the tumor for safe administration to humans, as is the case for the FDA-approved drugs Adcetris (auristatin antibody-drug-conjugate by Seagen) and Kadcyla (maytansine antibody-drug-conjugate by Genentech). We believe that LADR-based drugs offer the benefits of tumor targeting without the disadvantages of antibodies and other macromolecules, which include expense, complexity, and negative side effects. Additionally, albumin is a very well-characterized drug target, which we believe will reduce clinical and regulatory costs and risks.

The Company's postulated mechanism of action for LADR-based drugs is as follows:

- after administration, the linker portion of the drug conjugate forms a rapid and specific covalent bond to the cysteine-34 position of circulating albumin;
- circulating albumin preferentially accumulates in tumors due to a mechanism called "Enhanced Permeability and Retention", which results in lower exposure to the drug in noncancerous tissues of the heart, liver, and other organs;
- once localized at the tumor, the acid-sensitive linker of the LADR™ backbone is cleaved due to the specific conditions within the tumor and in the tumor microenvironment; and
- free active drug is then released within the tumor, causing tumor cell death.

The first-generation LADR-based drug is called aldoxorubicin. Aldoxorubicin is the drug doxorubicin attached to the first generation LADR™ backbone (LADRs 7-10 employ a next generation LADR™ backbone). Aldoxorubicin has been administered to over 600 human subjects in human clinical trials and has proven the concept of LADR™ in that several-fold more doxorubicin can be safely administered to patients when the doxorubicin is attached to LADR™ than when administered as native doxorubicin. Aldoxorubicin has been licensed to ImmunityBio, and is currently in a Phase II registrational intent trial for pancreatic cancer. Aldoxorubicin is expected to enter a Phase I/II trial for glioblastoma in 2023.

The next generation LADR™ drugs are termed LADR7, 8, 9, and 10. A great deal of IND-enabling work has already been accomplished on LADR7-10, including in-silico modeling, in-vitro efficacy testing in several different cancer models, in-vivo dosing, safety, and efficacy testing in several different cancer models in animals. We have also developed and proven manufacturability, an important step prior to beginning human clinical trials.

The IND-enabling work that remains prior to applying to the FDA for first-in-human studies for LADR7-10 is limited due to the extensive experimentation already completed. For example, in the case of LADR7, a manufacturing run under GMP must be completed and some toxicology studies completed using the GMP material must be completed in animals. Toxicology studies with LADR7 have already been completed with non-GMP manufactured drug. Management estimates that these final IND-enabling activities for LADR7 would take approximately 12 months to complete, once funded and initiated, and that first-in-human dosing would be achieved within approximately 6-9 months after completion of the IND-enabling studies. Management further estimates that the cost to manufacture GMP material for one LADR™ drug, for example LADR7, complete all pre-IND studies, and to obtain an IND could be approximately $2 million in direct costs, based on current estimates, representing a capital-efficient path to clinical entry.

Because the LADR™ backbone in future products would be the same as the LADR™ backbone in current product candidates (i.e. the chemotoxin can be changed without changing the LADR™ backbone), management anticipates that future product candidates beyond LADR7-10 may enjoy abbreviated pre-clinical pathways to first-in-human. Such abbreviated pathways would be subject to FDA review and agreement.

The Company's novel companion diagnostic, ACDx™ (albumin companion diagnostic) was developed to identify patients with cancer who are most likely to benefit from treatment with the four LADR™ lead assets. We have not yet determined whether the use of a companion diagnostic will be necessary or helpful, and plan to continue to investigate this question in parallel to the pre-clinical and clinical development of LADRs 7-10.

The LADR™ backbone and drugs that employ LADR™ are protected by domestic and international patents, and additional patents are pending.

Business Strategy for LADR™ Platform

Throughout 2022, with the assistance of oncology drug development experts, the Company has inventoried the IND-enabling data for LADRs 7-10, developed a strategy to complete the IND-enabling studies necessary for at least one LADR™ drug, and worked with vendors on establishing approximate time lines and costs to reach first-in-human dosing, inclusive of manufacturing, and completion of pre-IND studies and FDA filings, With this important groundwork completed, we believe that management is well situated to rapidly advance our next-generation LADR™ assets as soon as funding or partnering is achieved, and is working diligently to obtain funding and/or partnering of the LADR™ assets. Management will continue to explore in parallel both partnered and non-partnered funding and development strategies for LADR™ with a goal of obtaining the least costly capital possible to enable value inflection milestones.

Partnering of Aldoxorubicin

On July 27, 2017, the Company entered into an exclusive worldwide license agreement with ImmunityBio, granting to ImmunityBio the exclusive rights to develop, manufacture and commercialize aldoxorubicin in all indications, and the Company is no longer directly working on the development of aldoxorubicin. As part of the license agreement, ImmunityBio made a strategic investment of $13 million in LadRx common stock at $660.00 per share (adjusted to reflect the Company's 2017 reverse stock split), a premium of 92% to the market price on that date. In connection therewith, the Company also issued ImmunityBio a warrant to purchase up to 5,000 shares of common stock at $660.00, which expired on January 26, 2019. The Company is entitled to receive up to an aggregate of $343 million in potential milestone payments, contingent upon achievement of certain regulatory approvals and commercial milestones. The Company is also entitled to receive ascending double-digit royalties for net sales for soft tissue sarcomas and mid to high single digit royalties for other indications. There can be no assurance that ImmunityBio will achieve such milestones, approvals or sales with respect to aldoxorubicin.

ImmunityBio is conducting an open-label, randomized, Phase 2 study of a combination of immunotherapy, aldoxorubicin and standard-of-care chemotherapy versus standard-of-care chemotherapy alone for the treatment of locally advanced or metastatic pancreatic cancer in patients who have had 1 or 2 lines of treatment (Cohorts A and B) or 3 or greater lines of treatment (Cohort C).

In January 2023, ImmunityBio announced positive results in its fully enrolled metastatic pancreatic cancer study in third-line or greater subjects (QUILT 88) showing that the overall survival rate for patients continues to be double compared to historical survival rates after two or more prior lines of therapy. The results were presented at the American Society of Clinical Oncology Gastrointestinal (ASCO GI) conference in San Francisco on January 19-21, 2023. The median OS in this highly advanced group of patients, up to seven lines (N=83) of treatment, was 5.8 months (95% CI: 4.9, 6.4 months), exceeding the approximately 2- to 3-month historical median OS. In the third-line setting (N=41), the median OS in this group was 6.3 months (95% CI: 5.0, 7.2 months), more than doubling the historical OS. The baseline median CA 19-9 level (a marker of metastatic pancreatic disease) of the enrolled subjects (N=83) was very high at 4120 IU/ml, a significant increase from normal levels of 40 IU/ml. In subjects with CA 19-9 levels less than 4120 IU/ml (N=40), the median OS was 6.9 months (95% CI: 5.7,10.9).

In December 2022, Immunity Bio held a Type B meeting with the FDA to discuss the path for approval for this combination therapy for pancreatic cancer. The FDA advised ImmunityBio to conduct a randomized trial. This Phase 2, randomized, three-cohort, open-label study plans to evaluate the comparative efficacy and overall safety of standard-of-care chemotherapy versus low-dose chemotherapy in combination with PD-L1 t-haNK, Anktiva (N-803), and aldoxorubicin in subjects with locally advanced or metastatic pancreatic cancer (NCT04390399). Each treatment setting, as well as each first- and second-line or later maintenance treatment, will be evaluated independently as Cohorts A, B, and C, respectively, with Cohorts A and B having independent experimental and control arms. The primary objective of Cohorts A and B is progression-free survival (PFS) per RECIST V1.1, and the objective of Cohort C is overall survival (OS). Secondary objectives include initial safety and additional efficacy measures, including overall response rate (ORR), complete response (CR) rate, durability of response (DoR), disease control rate (DCR), and overall survival (OS).

Aldoxorubicin has received ODD by the FDA for the treatment of STS. ODD provides several benefits including seven years of market exclusivity after approval, certain R&D related tax credits, and protocol assistance by the FDA. European regulators granted aldoxorubicin Orphan designation for STS which confers ten years of market exclusivity among other benefits.

ImmunityBio also lists ongoing clinical studies in glioblastoma; it is currently reviewing its options in STS.

Molecular Chaperone Assets (Orphayzme)

In 2011, LadRx sold the rights to arimoclomol and iroxanadine, based on molecular chaperone regulation technology, to Orphazyme in exchange for a one-time, upfront payment and the right to receive up to a total of $120 million in milestone payments upon the achievement of certain pre-specified regulatory and business milestones, as well as royalty payments based on a specified percentage of any net sales of products derived from the 2011 Arimoclomol Agreement. Orphazyme transferred its rights and obligations under the 2011 Arimoclomol Agreement to KemPharm in May 2022.

In May 2021, Orphazyme announced that the pivotal phase 3 clinical trial for arimoclomol in Amyotrophic Lateral Sclerosis did not meet its primary and secondary endpoints, reducing the maximum amount that LadRx currently has the right to receive under the 2011 Arimoclomol Agreement to approximately $100 million. Orphazyme also tested arimoclomol in NPC and Gaucher disease, and following a Phase II/III trial submitted to the FDA a NDA for the treatment of NPC with arimoclomol. On June 18, 2021, Orphazyme announced it had received a Complete Response Letter from the FDA indicating the need for additional data. In late October 2021, Orphazyme announced it held a Type A meeting with the FDA, at which the FDA recommended that Orphazyme submit additional data, information and analyses to address certain topics in the Complete Response Letter and engage in further interactions with the FDA to identify a pathway to resubmission. The FDA concurred with Orphazyme's proposal to remove the cognition domain from the NPCCSS endpoint, with the result that the primary endpoint is permitted to be recalculated using the 4- domain NPCCSS, subject to the submission of additional requested information which Orphazyme had publicly indicated that it intended to provide. To bolster the confirmatory evidence already submitted, the FDA affirmed that it would require additional in vivo or pharmacodynamic (PD)/pharmacokinetic (PK) data. Orphazyme planned to request a Type C Meeting with the FDA in the second quarter of 2022. Subject to discussions with the regulatory body, Orphazyme had publicly indicated that it planned to resubmit the NDA for arimoclomol in the second half of 2022.

Orphazyme had also submitted a MAA with the EMA. In February 2022, Orphazyme announced that although they had received positive feedback from the CHMP of the EMA, they were notified by the CHMP of a negative trend vote on the MAA for arimoclomol for NPC following an oral explanation. In March 2022 Orphazyme removed its application with the EMA. Orphazyme has publicly indicated that it will assess its strategic options and provide an update to the market at the applicable time.

On May 31, 2022, Orphazyme announced that it had completed the sale of substantially all of its assets and business activities for cash consideration of $12.8 million and assumption of liabilities estimated to equal approximately $5.2 million to KemPharm, a specialty biopharmaceutical company focused on the discovery and development of novel treatments for rare CNS diseases. As part of the KemPharm Transaction, all of Orphazyme's obligations to LadRx under the 2011 Arimoclomol Agreement, including with regard to milestone payments and royalties on sales, were assumed by KemPharm. KemPharm is expected to continue the early access programs with arimoclomol, and to continue to pursue the potential approval of arimoclomol as a treatment option for NPC. KemPharm indicated it plans on resubmitting the NDA for arimoclomol in the first quarter of 2023. It is also identifying a regulatory path forward with the EMA. KemPharm has recently re-branded to Zevra Therapeutics, Inc.

Innovive Acquisition Agreement

On September 19, 2008, we completed our merger acquisition of Innovive, and its clinical-stage cancer product candidates, including aldoxorubicin and tamibarotene. Under the merger agreement by which we acquired Innovive, we agreed to pay the former Innovive stockholders up to approximately $18.3 million of future earnout merger consideration, subject to our achievement of specified net sales under the Innovive license agreements. The earnout merger consideration, if any, will be payable in shares of our common stock, subject to specified conditions, or, at our election, in cash or by a combination of shares of our common stock and cash. Our common stock will be valued for purposes of any future earnout merger consideration based upon the trading price of our common stock at the time the earnout merger consideration is paid. The earnout will be accrued if and when earned. As of December 31, 2022 and 2021, no amounts were due under this agreement.

Commercialization and Marketing

We currently have no sales, marketing or commercial product distribution capabilities or experience in marketing products.

We are searching for a development and commercialization partner or a financing for our LADR drug candidates and do not currently plan on commercializing them ourselves. Over the past two years, we have been unable to attract either a development and commercial partner or a financing for this endeavor; however, we are continuing to pursue all possibilities.

Patents and Proprietary Technology

We actively seek patent protection for our technologies, processes, uses, and ongoing improvements and consider our patents and other intellectual property to be critical to our business. We regularly evaluate the patentability of new inventions and improvements developed by us or our collaborators, and, whenever appropriate, will endeavor to file U.S. and international patent applications to protect these new inventions and improvements. We cannot be certain that any of the current pending patent applications we have filed or licensed, or any new patent applications we may file or license, will ever be issued in the U.S. or any other country. There also is no assurance that any issued patents will be effective to prevent others from using our products or processes. It is also possible that any patents issued to us, as well as those we have licensed or may license in the future, may be held invalid or unenforceable by a court, or third parties could obtain patents that we would need to either license or to design around, which we may be unable to do. Current and future competitors may have licensed or filed patent applications or received patents and may acquire additional patents and proprietary rights relating to compounds, products or processes that may be competitive with ours.

As of December 31, 2022, we have three granted U.S. patents and twenty-five granted foreign patents, and two pending U.S. patent applications and thirty-eight pending foreign patent applications covering our LADRTM-related technology including LADR-7, LADR-8, LADR-9 and LADR-10. The un-extended patent term of patents that issue covering our LADRTM-related technology is between June 2036 and November 2038. We also have one pending US patent application and fourteen pending foreign patent applications covering our albumin companion diagnostic (ACDxTM). The un-extended patent term of patents that issue covering our ACDxTM is July 2039. The patents and patent applications covering our LADRTM-related technology, and ACDxTM are assigned to LadRx Corporation. In conjunction with our July 27, 2017, ImmunityBio licensing agreement, we granted ImmunityBio an exclusive license to all our aldoxorubicin-related patents, including the rights in three granted U.S. patents, twenty granted foreign patents and three pending foreign patent applications covering aldoxorubicin and related technologies. Our intellectual property holdings relating to aldoxorubicin, and related technologies include an exclusive license from Vergell Medical, S.A ("Vergell"). Patents and applications that cover pharmaceutical compositions comprising aldoxorubicin and their use in treating cancer (including glioblastoma) have un-extended patent terms expiring between December 2033 and June 2034.

In addition to patent protection, we attempt to protect our proprietary products, processes and other information by relying on trade secrets and non-disclosure agreements with our employees, consultants and certain other persons who have access to such products, processes and information. Under the agreements, all inventions conceived by employees are our exclusive property, but there is no assurance that these agreements will afford significant protection against misappropriation or unauthorized disclosure of our trade secrets and confidential information.

LICENSE AGREEMENTS

Aldoxorubicin

We are the licensee of patent rights held by KTB Tumorforschungs GmbH ("KTB") for the worldwide development and commercialization of aldoxorubicin under a license agreement dated April 17, 2006. In February 2017, we received notice that KTB had transferred and assigned its rights and obligations under the license to Vergell. The license is exclusive and applies to all products that may be subject to the licensed intellectual property in all fields of use. We may sublicense the intellectual property in our sole discretion. Pursuant to an amendment to the license agreement entered into in March 2014, we also have a non-exclusive worldwide license to any additional technology that is claimed or disclosed in the licensed patents and patent applications for use in the field of oncology.

Under the agreement, we must make payments to Vergell in the aggregate of up to $7.5 million upon meeting certain clinical and regulatory milestones, and up to and including the product's second final marketing approval. We also agreed to pay:

- commercially reasonable royalties based on a percentage of net sales (as defined in the agreement)
- a percentage of any non-royalty sub-licensing income (as defined in the agreement); and
- milestones of $1 million for each additional final marketing approval that we obtain.

In the event that we must pay a third party in order to exercise our rights to the intellectual property under the agreement, we are entitled to deduct a percentage of those payments from the royalties due Vergell, up to an agreed upon cap.

Under the agreement with Vergell, we must use commercially reasonable efforts to conduct the research and development activities we determine are necessary to obtain regulatory approval to market aldoxorubicin in those countries that we determine are commercially feasible. Under the agreement, Vergell is to use its commercially reasonable efforts to provide us with access to suppliers of the active pharmaceutical ingredient, or API, of aldoxorubicin, on the same terms and conditions as may be provided to Vergell by those suppliers.

The agreement will expire on a product-by-product basis upon the expiration of the subject patent rights. We have the right to terminate the agreement on 30 days' notice, provided we pay a cash penalty to Vergell. Vergell may terminate the agreement if we are in breach and the breach is not cured within a specified cure period, or if we fail to use diligent and commercial efforts to meet specified clinical milestones.

Molecular Chaperone Assets

The agreement relating to our worldwide rights to arimoclomol provides for our payment up to an aggregate of $3.65 million upon receipt of milestone payments from KemPharm.

Competition

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. While we believe that our LADR™ technology platform and ultra-high potency albumin-bind drug conjugates provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies and public and private research institutions. Any drug candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future.

Many competitors and potential competitors have substantially greater scientific, research and product development capabilities, as well as greater financial, marketing and human resources than we do. In addition, many specialized biotechnology firms have formed collaborations with large, established companies to support the research, development and commercialization of products that may be competitive with ours.

There are many companies developing antibody-drug conjugates (ADC) for the treatment of cancer and some that use the same classes of cytotoxic payloads as we are currently using. These include Takeda Pharmaceutical Co. Ltd. and Seattle Genetics Inc. who market Adcetris®, and F. Hoffmann-LaRoche Ltd./Genentech who market Kadcyla®. According to www.clinicaltrials.gov, many other major pharmaceutical companies, including Celgene and GlaxoSmithKline are testing an ADC in either on-going or currently enrolling clinical trials. Other companies have created or have programs to create cell-killing agents for attachment to antibodies or other targeting agents. These companies may compete with us for technology out-license arrangements.

In addition to ADCs, we face competition from other nanomedicine platforms developing targeted therapies, including platforms focused on nanoparticles and liposomes. Non-ADC therapies may be in development for the cancer types we or our partners elect to pursue. Further, these companies may also compete with us for technology out-license arrangements.

Continuing development of conventional and targeted cytotoxins by large pharmaceutical companies and biotechnology companies may result in new compounds that may compete with our product candidates. More recently, immuno-oncology therapies that stimulate the body's own defense system to attack cancers are being developed by certain of these companies and some have been approved for use as cancer therapeutics. In the future, immuno-oncology agents including cell therapies, targeted therapies or cytotoxic treatments may compete with our product candidates. Other companies have created or have programs to create potent cell-killing agents for attachment to tumor targeting agents. These companies may compete with us for technology out-license arrangements.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we obtain approval for ours. In addition, our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic products. If our drug candidates achieve marketing approval, we expect that they will be priced at a significant premium over competitive generic products.

Many companies, including large pharmaceutical and biotechnology firms with financial resources, research and development staffs, and facilities that may be substantially greater than those of ours or our strategic partners or licensees, are engaged in the research and development of pharmaceutical products that could compete with our potential products. To the extent that we seek to acquire, through license or otherwise, existing or potential new products, we will be competing with numerous other companies, many of which will have substantially greater financial resources, large acquisition and research and development staffs that may give those companies a competitive advantage over us in identifying and evaluating these drug acquisition opportunities. Any products that we acquire will be competing with products marketed by companies that in many cases will have substantially greater marketing resources than we have. The industry is characterized by rapid technological advances and competitors may develop their products more rapidly and such products may be more effective than those currently under development or that may be developed in the future by our strategic partners or licensees. Competitive products for a number of the disease indications that we have targeted are currently being marketed by other parties, and additional competitive products are under development and may also include products currently under development that we are not aware of or products that may be developed in the future.

Government Regulation

Regulation of Pharmaceuticals in the United States

The U.S. and other developed countries extensively regulate the preclinical and clinical testing, manufacturing, labeling, storage, record-keeping, advertising, promotion, export, marketing and distribution of drugs and biologic products. In the United States, the FDA, under the Federal Food, Drug, and Cosmetic Act ("FDCA"), the Public Health Service ("PHS") Act and other federal statutes and regulations, regulates pharmaceutical and biologic products and product candidates, and the parties engaged in the development, testing, manufacture, distribution, storage, marketing, labeling, advertising, and/or commercialization thereof (in addition to any other related activities) are subject to rigorous pre- and post-market requirements.

To obtain FDA approval for a new drug candidate, we must, among other requirements, submit data supporting the candidate's safety and efficacy for the intended indication(s), as well as detailed information on the manufacture and composition of the product candidate. In most cases, this will require extensive laboratory tests and preclinical and clinical trials. The collection of these data, as well as the preparation of applications for review by the FDA involve significant time and expense and are inherently complex and uncertain. The FDA may not act quickly or favorably in reviewing these applications, and we (and/or any current or future partners in development) may encounter significant difficulties or costs in our (and/or their) efforts to obtain FDA approvals that could delay or preclude the U.S. commercialization of one or more of our product candidates.

The process required by the FDA before a new drug may be marketed in the U.S. generally involves some or all of the following key steps:

- completion of nonclinical studies, such as laboratory tests, animal studies, and formulation studies, performed in compliance with FDA regulations for good laboratory practices ("GLPs") and other applicable regulations;
- design of a clinical protocol and its submission to the FDA as part of an IND application, which must become effective before human clinical trials may begin;
- performance of adequate and well-controlled human clinical trials according to good clinical practices ("GCPs") to establish the safety and efficacy of the product candidate for its intended use;
- submission of an NDA to the FDA along with payment of the application user fee and FDA acceptance of that NDA as a complete submission eligible for substantive review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facilities at which the active pharmaceutical ingredient, or API, and finished drug product are produced and tested to assess readiness for commercial manufacturing and conformance to the manufacturing-related elements of the application, to conduct a data integrity audit, and to assess compliance with current good manufacturing practices ("cGMPs"), in order to assure that the facilities, methods and controls are adequate to preserve the drug candidate's identity, strength, quality and purity;
- possible inspection of selected clinical study sites to confirm compliance with GCP requirements and data integrity; and
- FDA substantive review and approval of the NDA, including satisfactory completion of an FDA advisory committee review of the product candidate, if applicable, which must occur prior to any commercial marketing or sale of the drug product in the United States.

Preclinical Studies

After a therapeutic candidate is identified for development, it enters the preclinical or nonclinical testing stage. Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. Preclinical tests intended for submission to the FDA to support the safety of a product candidate must be conducted in compliance with GLP regulations and the United States Department of Agriculture's Animal Welfare Act, if applicable. A drug sponsor must submit the results of the preclinical 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 after the IND is submitted. In addition to including the results of the nonclinical studies, the IND will include one or more clinical protocols detailing, among other things, the objectives of the clinical trial and the safety and effectiveness criteria to be evaluated.

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. A clinical hold may occur at any time during the life of an IND and may affect one or more specific studies or all studies conducted under the IND. Occasionally, clinical holds are imposed due to manufacturing issues that may present safety issues for the clinical study subjects.

Human Clinical Trials in Support of an NDA

The clinical investigation of an investigational new drug is divided into three phases that typically are conducted sequentially but may overlap or be combined. The three phases are as follows:

- *Phase 1.* Phase 1 includes initial clinical trials introducing an investigational new drug into humans and may be conducted in subjects with the target disease or healthy volunteers. These trials are designed to determine the metabolism and pharmacologic actions of the drug in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness.
- *Phase 2.* Phase 2 includes the controlled clinical trials conducted to evaluate the effectiveness of the drug candidate for a particular indication or indications in subjects with the disease or condition under study and to determine the common short-term side effects and risks associated with the drug. Phase 2 trials are typically well controlled, closely monitored, and conducted in a relatively small number of subjects.
- *Phase 3.* Phase 3 trials are typically large trials performed after preliminary evidence suggesting effectiveness of the drug candidate has been obtained. They are intended to gather additional information about the effectiveness and safety that is needed to evaluate the overall benefit-risk relationship of the drug and to provide an adequate basis for physician labeling and product marketing approval. Phase 3 trials usually are conducted at geographically dispersed clinical study sites.

A clinical trial may combine the elements of more than one phase and the FDA often requires more than one Phase 3 trial to support marketing approval of a product candidate. A company's designation of a clinical trial as being of a particular phase is not necessarily indicative that the study will be sufficient to satisfy the FDA requirements of that phase because this determination cannot be made until the protocol and data have been submitted to and reviewed by the FDA. Human clinical trials are inherently uncertain and Phase 1, Phase 2 and Phase 3 testing may not be successfully completed.

A pivotal trial is a clinical trial that is believed to satisfy FDA requirements for the evaluation of a product candidate's safety and efficacy such that it can be used, alone or with other pivotal or non-pivotal trials, to support regulatory approval. Generally, pivotal trials are Phase 3 trials, but they may be Phase 2 trials if the design provides a well-controlled and reliable assessment of clinical benefit, particularly in an area of unmet medical need.

Clinical trials must be conducted under the supervision of one or more qualified investigators in accordance with the FDA's GCP requirements. They must be conducted under protocols detailing the objectives of the trial, dosing procedures, research subject selection and exclusion criteria and the safety and effectiveness criteria to be evaluated. Each protocol, and any subsequent material amendment to the protocol, must be submitted to the FDA as part of the IND, and progress reports detailing the status of the clinical trials must be submitted to the FDA annually. Sponsors also must report to the FDA serious and unexpected adverse reactions in a timely manner, any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigation brochure or any findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the product or therapeutic candidate. The FDA may order the temporary or permanent discontinuation of a clinical trial at any time, via a clinical hold, or impose other sanctions if it believes that the clinical trial is not being conducted in accordance with FDA requirements or that the subjects are being exposed to an unacceptable health risk. An institutional review board ("IRB"), is responsible for ensuring that human subjects in clinical studies are protected from inappropriate study risks. An IRB at each institution participating in the clinical trial must review and approve the protocol before a clinical trial commences at that institution and must also approve the information regarding the trial and the consent form that must be provided to each research subject or the subject's legal representative, monitor the trial until completed and otherwise comply with IRB regulations. The IRB also may halt a study, either temporarily or permanently, for failure to comply with GCP or the IRB's requirements, or if the investigational new drug has been associated with unexpected serious harm to patients.

During the development of a new drug product candidate, sponsors are given opportunities to meet with the FDA at certain points; specifically, prior to the submission of an IND, at the end of Phase 2 and before an NDA is submitted. Meetings at other times may be requested. These meetings can provide an opportunity for the sponsor to share information about the data gathered to date and for the FDA to provide advice on the next phase of development. Sponsors typically use the meeting at the end of Phase 2 to discuss their Phase 2 clinical results and present their plans for the pivotal Phase 3 clinical trial that they believe will support the approval of the new therapeutic.

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

Concurrent with clinical trials, sponsors usually complete additional animal safety studies, develop additional information about the chemistry and physical characteristics of the product candidate and finalize a process for manufacturing commercial quantities of the product candidate in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other criteria, the sponsor must develop methods for testing the identity, strength, quality, and purity of the finished drug product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

Marketing Application Submission and FDA Review

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, detailed information on the product candidate is submitted to the FDA in the form of an NDA requesting approval to market the drug for one or more indications. An NDA includes all relevant data available from pertinent nonclinical studies and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information on the product candidate’s chemistry, manufacturing, and controls, or CMC, and proposed labeling, among other things. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and efficacy of the product candidate for its intended use to the satisfaction of the FDA.

Under the Prescription Drug User Fee Act (“PDUFA”), each NDA must be accompanied by a significant user fee. The FDA adjusts the PDUFA user fees on an annual basis. PDUFA also imposes an annual program fee for prescription drug products. Fee waivers or reductions are available in certain circumstances, such as where a waiver is necessary to protect the public health, where the fee would present a significant barrier to innovation, or where the applicant is a small business submitting its first human therapeutic application for review.

Under the goals and policies agreed to by the FDA under PDUFA, the FDA has ten months from receipt in which to complete its initial review of a standard NDA for a drug that is not a new molecular entity, and six months from the receipt date for an application with priority review. The FDA does not always meet its PDUFA goal dates, and the review process is often significantly extended by FDA requests for additional information or clarification and a sponsor’s process to respond to such inquiries. As a result, the NDA review process can be very lengthy. Most innovative drug products (other than biological products) obtain FDA marketing approval pursuant to an NDA submitted under Section 505(b)(1) of the FDCA, commonly referred to as a traditional (or full) NDA.

The FDA conducts a preliminary review of all NDAs it receives to ensure that they are sufficiently complete for substantive review before it accepts them for filing. The FDA may refuse to file any NDA that it deems incomplete or not properly reviewable at the time of submission, and 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 also is subject to review before the FDA accepts it for filing. The FDA has 60 days after submission of an NDA to conduct an initial review to determine whether it is sufficient to accept for filing. If the submission is accepted for filing, the FDA begins an in-depth substantive review of the NDA. The FDA reviews the NDA to determine, among other things, whether the proposed product is safe and effective for its intended use, whether it has an acceptable purity profile and whether the product is being manufactured in accordance with cGMPs. During its review of an NDA, the FDA may refer the application to an advisory committee of independent experts for a recommendation as to whether the application should be approved. 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 recommendation of an advisory committee, but it typically follows such recommendations. Data from clinical trials are not always conclusive, and the FDA or its advisory committee may interpret data differently than the NDA sponsor interprets the same data. The FDA may also re-analyze the clinical trial data, which could result in extensive discussions between the FDA and the applicant during the review process.

Before approving an NDA, the FDA will typically inspect the facilities at which the product is manufactured. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving the NDA, the FDA will typically inspect one or more clinical sites to assure that the clinical trials were conducted in compliance with IND trial requirements and GCP requirements and to assure the integrity of the clinical data submitted to the FDA. To ensure cGMP and GCP compliance by its employees and third-party contractors, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production and quality control.

The FDA may also require the submission of a risk evaluation and mitigation strategy, or "REMS," if it determines that a REMS is necessary to ensure that the benefits of the drug outweigh its risks and to assure the safe use of the product. A REMS 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 determines the requirement for a REMS, as well as the specific REMS provisions, on a case-by-case basis. If the FDA concludes a REMS is needed, the sponsor must include a proposed REMS within its NDA submission.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities where the drug product or its API will be produced and the clinical trial sites, the FDA will either issue an approval letter or, in some cases, a complete response letter ("CRL") that describes all of the specific deficiencies that the FDA has identified in the NDA. A CRL indicates that the review cycle of the application is complete but that the application will not be approved in its present form. The deficiencies identified may be minor (e.g., requiring labeling changes) or major (e.g., requiring additional clinical trials and/or other time-consuming and expensive measures to generate the requisite safety and/or efficacy data). After receiving a CRL, an applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter or withdraw the application. FDA will issue a letter within 30 days of an NDA resubmission acknowledging receipt and informing the applicant as follows. For resubmissions deemed to be complete responses to all deficiencies identified in the CRL, such letter will contain FDA's designation of the resubmission as Class 1 or Class 2 (based on the nature of information received therein) and the corresponding due date by which it will take action (2 months for Class 1 resubmissions and 6 months for Class 2). If FDA does not find the resubmission to be a complete response to all CRL deficiencies, the FDA will inform the applicant, and the FDA's "review clock" will not start until a complete response is received.

The FDA may withdraw its approval for a drug product if compliance with regulatory requirements is not maintained or unexpected problems occur after the product reaches the market. Later discovery of previously unknown problems with a drug, including serious and/or unexpected adverse experiences, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies to assess new safety risks; or the imposition of distribution or other restrictions under a REMS.

We and/or our present or future suppliers, contract manufacturers, and/or other affiliates involved in one or more of our current or future U.S. development and/or commercialization activities (if applicable) may not be able to comply with all FDA regulatory requirements. For example, we may believe that all clinical studies are being conducted in accordance with the FDA's IND regulations and that none of our investigational products are being promoted with claims of safety and/or effectiveness for the intended use(s) for which they are under investigation, but the FDA may determine otherwise, which could subject us to enforcement action and/or delay or prevent the ultimate approval of our applicable product candidate(s). From a post-market perspective, with regard to any products we may commercialize in the United States in the future, we may believe our manufacturing operations (including that of our partners and/or contractors, as applicable) are fully compliant with cGMPs and that all promotional communications disseminated by or on behalf of us are consistent with FDA's prescription-drug marketing requirements, but the FDA may disagree and take enforcement action against us. Accordingly, we could be subject to a number of adverse enforcement actions and/or penalties in connection with any failure(s) to comply with the FDCA and/or its implementing regulations at any stage in development and/or commercialization (if applicable), including, but not limited to, the following:

- fines, warning letters, untitled letters, public warnings, consumer advisories, "dear doctor" letters, and other similar publications or issuances;

- refusal of the FDA to approve pending NDAs or supplements to approved NDAs;
- seizure, detention, import alerts;
- injunctions or the imposition of civil or criminal penalties;
- consent decrees, corporate integrity agreements, debarment, or exclusion from federal healthcare programs; or
- mandated modification of promotional materials and labeling and the issuance of corrective information.

We and our manufacturers and other partners in development and/or (future) commercialization, as applicable, also will be subject to regulation under the Occupational Safety and Health Act, the National Environmental Policy Act, the Nuclear Energy and Radiation Control Act, the Toxic Substance Control Act and the Resource Conservation and Recovery Act. We will also be subject to a variety of federal, state and local regulations relating to the use, handling, storage and disposal of hazardous materials, including chemicals and radioactive and biological materials.

We will also be subject to a variety of regulations governing clinical trials and sales of our products outside the U.S. Whether or not FDA approval has been obtained, approval of a product candidate by the comparable regulatory authorities of foreign countries and regions must be obtained prior to the commencement of marketing the product in those countries. The approval process varies from one regulatory authority to another and the time may be longer or shorter than that required for FDA approval. In the European Union, Canada and Australia, regulatory requirements and approval processes are similar, in principle, to those in the U.S.

Further, the healthcare regulatory environment has seen significant changes in recent years and is still in flux. Legislative initiatives to modify, limit, replace, or repeal the ACA and judicial challenges have continued. We cannot predict the extent to which our business may be impacted by legal challenges to the ACA or other aspects of the Healthcare Reform Law or other changes to the current laws and regulations. The financial impact of U.S. healthcare reform legislation over the next few years will depend on a number of factors, including the policies reflected in implementing regulations and guidance and changes in sales volumes for therapeutics affected by the legislation. From time to time, legislation is drafted, introduced and passed in the U.S. Congress that could significantly change the statutory provisions governing coverage, reimbursement, and marketing of pharmaceutical products. In addition, third-party payor coverage and reimbursement policies are often revised or interpreted in ways that may significantly affect our business and any products we or our partners may commercialize in the future, as well as the prospects and/or viability of our product candidates.

During his time in office, former President Trump supported the repeal of all or portions of the ACA. President Trump also issued an executive order in which he stated that it is his administration’s policy to seek the prompt repeal of the ACA and in which he directed executive departments and federal agencies to waive, defer, grant exemptions from, or delay the implementation of the provisions of the ACA to the maximum extent permitted by law. Congress has enacted legislation that repeals certain portions of the ACA, including but not limited to the Tax Cuts and Jobs Act, passed in December 2017, which included a provision that eliminates the penalty under the ACA’s individual mandate, effective January 1, 2019, as well as the Bipartisan Budget Act of 2018, passed in February 2018, which, among other things, repealed the Independent Payment Advisory Board (which was established by the ACA and was intended to reduce the rate of growth in Medicare spending).

Additionally, in December 2018, a district court in Texas held that the individual mandate is unconstitutional and that the rest of the ACA is, therefore, invalid. On appeal, the Fifth Circuit Court of Appeals affirmed the holding on the individual mandate but remanded the case back to the lower court to reassess whether and how such holding affects the validity of the rest of the ACA. The Fifth Circuit’s decision on the individual mandate was appealed to the U.S. Supreme Court. On June 17, 2021, the Supreme Court held that the plaintiffs (comprised of the state of Texas, as well as numerous other states and certain individuals) did not have standing to challenge the constitutionality of the ACA’s individual mandate and, accordingly, vacated the Fifth Circuit’s decision and instructed the district court to dismiss the case. As a result, the ACA will remain in-effect in its current form for the foreseeable future; however, we cannot predict what additional challenges may arise in the future, the outcome thereof, or the impact any such actions may have on our business.

The Biden administration also introduced various measures in 2021 focusing on healthcare and drug pricing, in particular. For example, 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 ACA marketplace, which began on February 15, 2021, and remained open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. On the legislative front, the American Rescue Plan Act of 2021 was signed into law on March 11, 2021, which, in relevant part, eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source drugs and innovator multiple source drugs, beginning January 1, 2024. And, in July 2021, the Biden administration released an executive order entitled, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response, on September 9, 2021, 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. And, in November 2021, President Biden announced the "Prescription Drug Pricing Plan" as part of the Build Back Better Act (H.R. 5376) passed by the House of Representatives on November 19, 2021, which aims to lower prescription drug pricing by, among other things, allowing Medicare to negotiate prices for certain high-cost prescription drugs covered under Medicare Part D and Part B after the drugs have been on the market for a certain number of years and imposing tax penalties on drug manufacturers that refuse to negotiate pricing with Medicare or increase drug prices "faster than inflation." If enacted, this bill could have a substantial impact on our business. In the coming years, additional legislative and regulatory changes could be made to governmental health programs that could significantly impact pharmaceutical companies and the success of our product candidates. 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.

There is uncertainty as to what healthcare programs and regulations may be implemented or changed at the federal and/or state level in the U.S. or the effect of any future legislation or regulation. Furthermore, we cannot predict what actions the Biden administration will implement in connection with the Health Reform Law. However, it is possible that such initiatives could have an adverse effect on our or our partners' ability to obtain approval for and/or successfully commercialize products in the U.S. in the future.

Fraud and Abuse, Transparency, and Privacy

In the United States, we may be subject to various federal and state laws and regulations regarding fraud and abuse in the healthcare industry, as well as industry standards and guidance, such as the codes issued by the Pharmaceutical Research and Manufacturers of America (or "PhRMA Codes"), which some states reference or incorporate in their statutes and regulations. These laws, regulations, standards, and guidance may impact, among other things, our sales and marketing activities and our relationships with healthcare providers and patients. In addition, we may be subject to patient privacy regulations by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order, or recommendation of, an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;

- federal civil and criminal false claims laws and civil monetary penalty laws, including the False Claim Act, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from the federal government, including Medicare, Medicaid, or other third-party payors, that are false or fraudulent;

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

- the federal transparency laws, including the Physician Payments Sunshine Act, which requires applicable manufacturers of covered drugs to disclose payments and other transfers of value provided to physicians and teaching hospitals and physician ownership and investment interests;

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

- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines, state laws that require pharmaceutical manufacturers to report certain pricing or payment information, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrow scope of the statutory or regulatory exceptions and safe harbors available, our current or future activities, policies, and/or arrangements could be challenged under one or more of these laws. In addition, the federal government has identified relationships between drug companies (and other medical-product manufacturers) and healthcare providers as particularly susceptible to fraud and abuse and, thus, our relationships may be subject to heightened regulatory scrutiny, particularly once we have one or more products on the U.S. market, if ever. Further, many of the applicable healthcare laws and regulations are subject to varying and/or evolving interpretations, which makes achieving and maintaining consistent compliance more difficult. We may have to devote substantial costs, resources, and time to compliance efforts, particularly once one or more of our product candidates, or any other products to which we may obtain commercialization rights in the future, is marketed in the United States. If any of our past, current, or future operations and/or arrangements are found to be in violation of If our operations are found to be in violation of any healthcare laws or regulations that may apply to us, we may be subject to significant civil, criminal, and/or administrative penalties; damages; fines; personal imprisonment; exclusion from government-funded programs, such as Medicare and Medicaid; additional reporting requirements and oversight under a corporate integrity (or deferred prosecution or other similar) agreement with the applicable federal or state agency or agencies (such as the U.S. Office of Inspector General ("OIG"), the U.S. Department of Justice ("DOJ"), or state attorneys general); and/or the curtailment or restructuring of our operations. Any adverse enforcement action initiated against us based on actual or alleged violations of one or more of the healthcare laws and regulations could have a material adverse effect on our business, even if we are ultimately successful in defending against such claims.

Employees

As of April 10, 2023, we had two full-time employees.

Available Information

We maintain a website at www.ladrxcorp.com and make available there, free of charge, our periodic reports filed with the Securities and Exchange Commission (the "SEC"), as soon as is reasonably practicable after filing. Among other things, we post on our website our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments and Code of Business Conduct and Ethics. The SEC maintains a website at http://www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers such as us that file electronically with the SEC.

Properties

We lease our headquarters in Los Angeles, California. The lease covers approximately 2,771 square feet of office and storage space and expires in February 2024, with a right to extend the term for an additional five-year period, subject to the terms and conditions set forth in the lease agreement. Our monthly rent is $14,340, subject to an annual increase of 3.5 percent. We also lease additional storage space for approximately 540 square feet. This lease expires in February 2024, and requires us to make monthly payments of $1,405, subject to annual increases of 2.5 percent. In March 2022, we entered into a sub-lease for our office space that provides for a monthly rental income of $8,867, subject to an annual increase of 3.5 percent.

Legal Proceedings

We are occasionally involved in legal proceedings and other matters arising from the normal course of business. On November 30, 2022, Jerald Hammann ("Hammann") filed a complaint (the "Complaint") against the Company, Mr. Caloz, and Mr. Kriegsman (together, "Defendants") in the Court of Chancery of the State of Delaware, alleging various violations of a Cooperation Agreement, dated August 21, 2020, by and between the Company and Hammann. The Complaint alleges breaches of a provision limiting the Board's ability to effect discretionary compensation and a non-disparagement provision. The Complaint further alleges a breach of a purported implied obligation that the Company disclose various internal records to Hammann. Defendants believe the Complaint is wholly without merit and have moved to dismiss the Complaint in its entirety. Hammann has opposed the motion to dismiss and briefing of the motion is ongoing. Defendants intend to litigate vigorously against Hammann's claims.

We have directors' and officers' liability insurance, which will be utilized, after the deductible, in the defense of any matter involving our directors or officers.

We evaluate developments in legal proceedings and other matters on a quarterly basis. If an unfavorable outcome becomes probable and reasonably estimable, we could incur charges that could have a material adverse impact on our financial condition and results of operations for the period in which the outcome becomes probable and reasonably estimable.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read together with our consolidated financial statements and the related notes thereto, and the other financial information included elsewhere in this prospectus. Amounts for subtotal, totals and percentage variances included in tables may not sum or calculate using the numbers as they appear in the tables due to rounding. This discussion contains forward-looking statements that involve significant risks and uncertainties. Our actual results, performance and achievements could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed below and elsewhere in this prospectus, particularly under "Risk Factors" and "Special Note Regarding Forward-Looking Statements."

Overview

We are a biopharmaceutical research and development company specializing in oncology. Our focus is on the discovery, research and clinical development of novel anti-cancer drug candidates that employ novel technologies that target chemotherapeutic drugs to solid tumors and reduce off-target toxicities. During 2017, our discovery laboratory in Freiburg, Germany, synthesized and tested over 75 rationally designed drug conjugates with highly potent payloads, culminating in the creation of two distinct classes of compounds. Four lead candidates (LADR-7 through LADR-10) were selected based on *in vitro* and animal studies, in several different cancer models, stability, and manufacturing feasibility. In addition, a novel companion diagnostic, ACDx™, was developed to identify patients with cancer who are most likely to benefit from treatment with these drug candidates. However, the Company's research and development activities have been curtailed as they seek additional financing.

Liquidity and Capital Resources for the Year Ended December 31, 2022 and 2021

Going Concern

Our consolidated financial statements have been presented on the basis that it will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. During the year ended December 31, 2022, we incurred a net loss of $4.2 million, utilized cash in operations of $4.8 million, and the Company had a stockholders' deficit of $1.3 million as of December 31, 2022. In addition, we have no recurring revenue. As a result, management has concluded that there is substantial doubt about our ability to continue as a going concern. Our consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

At December 31, 2022, we had cash and cash equivalents of approximately $1.4 million. Our continuation as a going concern is dependent upon our ability to obtain necessary debt or equity financing to continue operations until we begin generating positive cash flow. No assurance can be given that any future financing will be available or, if available, that it will be on terms that are satisfactory to us. Even if we are able to obtain additional financing, we may contain undue restrictions on our operations, in the case of debt financing or cause substantial dilution for our stockholders, in case or equity financing.

Net cash used in operating activities for the year ended December 31, 2022 was $4.8 million, which was primarily the result of a net loss from operations of $4.2 million, plus $0.6 million in net cash outflows associated with changes in assets and liabilities. The net cash outflows associated with changes in assets and liabilities were primarily due to reductions of $1.0 million of accrued expenses, $0.5 million in accounts payable and $0.2 million in lease liabilities, offset by an increase in prepaid expenses and other current assets of $0.7 million, $0.2 million in accounts receivable and $0.2 million in amortization of right-of-use assets.

Net cash used in operating activities for the year ended December 31, 2021 was $12.3 million, which was primarily the result of a net loss from operations of $13.2 million, offset by $0.9 million in net cash inflows associated with changes in assets and liabilities. The net cash inflows associated with changes in assets and liabilities were primarily due to increases of $0.9 million of accrued expenses and other current liabilities, $0.2 million of amortization of right-of-use asset and $0.1 million of insurance receivable, offset by reductions of $0.2 million of prepaid expenses and other current assets and $0.2 million of decrease in lease liabilities.

We purchased $1,000 of fixed assets in the year ended December 31, 2022 and $7,000 of fixed assets in the year ended December 31, 2021, and do not expect any significant capital spending during the next 12 months.

We paid dividends on the Series C Preferred Stock of $0.6 million in the year ended December 31, 2022. Net cash provided by financing activities for the year ended December 31, 2021 was $9.1 million, $9.2 million of which was related to the sale of our common stock, Preferred Stock and preferred investment options described in Note 2 of our audited financial statements contained in prospectus and $0.1 million from the exercise of stock options, offset by $0.2 million paid in respect of preferred stock dividend.

We continue to evaluate potential future sources of capital, as we do not currently have commitments from any third parties to provide us with additional capital and we may not be able to obtain future financing on favorable terms, or at all. The results of our technology licensing efforts and the actual proceeds of any fund-raising activities will determine our ongoing ability to operate as a going concern. Our ability to obtain future financings through joint ventures, product licensing arrangements, royalty sales, equity financings, grants or otherwise is subject to market conditions and our ability to identify parties that are willing and able to enter into such arrangements on terms that are satisfactory to us. Depending upon the outcome of our fundraising efforts, the accompanying financial information may not necessarily be indicative of our future financial condition. Failure to obtain adequate financing would adversely affect our ability to operate as a going concern.

There can be no assurance that we will be able to generate revenues from our product candidates and become profitable. Even if we become profitable, we may not be able to sustain that profitability.

We do not have any off-balance sheet arrangements.

Inflation Risk

We do not believe that inflation has had a material effect on its operations to date, other than the impact of inflation on the general economy. However, there is a risk that our operating costs could become subject to inflationary pressures in the future, which would have the effect of increasing our operating costs, and which would put additional stress on our working capital resources.

Results of Operations for the Years Ended December 31, 2022 and 2021

We incurred a net loss of $4.2 million and $13.2 million for the years ended December 31, 2022 and 2021, respectively.

During the years ended December 31, 2022 and 2021, we recognized no service revenue and earned an immaterial amount of license fees and grant revenue. All future licensing fees under our current licensing agreements are dependent upon the achievement of successful development milestones by our licensees.

General and Administrative Expenses

	Year Ended December 31,	
	2022	2021
	(In thousands)	
General and administrative expenses	$ 4,534	$ 5,966
Employee stock and stock option expense	11	—
Total	$ 4,545	$ 5,966

General and administrative expenses include all administrative salaries and general corporate expenses, including legal expenses associated with the prosecution of our intellectual property. Our general and administrative expenses, excluding employee stock and stock option exercises, were $4.5 million and $6.0 million in the years ended December 31, 2022 and 2021, respectively.

Depreciation and Amortization

Depreciation and amortization expenses for the years ended December 31, 2022 and 2021 were approximately $15,000 and $14,000, respectively. The depreciation expense reflects the depreciation of our equipment and furnishings.

Forgiveness of Accounts Payable

During the year ended December 31, 2022, one of our vendors issued a credit note of $353,565 related to past general and administrative services.

Settlement with former Chief Executive Officer

On January 3, 2022, in connection with the Kriegsman Separation Agreement (as defined herein), Steven A. Kriegsman, who served as the Chairman and Chief Executive Officer of the Company, departed from his roles as an officer of the Company and the Chairman of the Company's board of directors, Mr. Kriegsman's departure as Chairman of the Board was not in connection with any disagreement between Mr. Kriegsman and the Company, its management, the Board or any committee of the Board on any matter relating to the Company's operations, policies or practices, or any other matter.

In connection with the execution of the Kriegsman Separation Agreement, the Kriegsman Employment Agreement (as defined herein) was terminated; provided, however, that certain surviving customary confidentiality provisions and milestone and royalty payments as defined in the Kriegsman Employment Agreement remain in full force and effect. Pursuant to the Kriegsman Employment Agreement and the Kriegsman Separation Agreement, Mr. Kriegsman received a lump sum cash payment equal to approximately $6.0 million.

Liquidated Damages

On July 13, 2021, the Company entered into a Securities Purchase Agreement (the "Purchase Agreement") with a single institutional investor (the "Investor") for aggregate gross proceeds of $10 million and net proceeds of approximately $9.2 million. The transaction closed on July 16, 2021. Under the Purchase Agreement, the Company sold and issued (i) 2 million shares of its common stock at a purchase price of $880.00 per share for total gross proceeds of approximately $1.76 million in a registered direct offering (the "Registered Direct Offering") and (ii) 8,240 shares of Preferred Stock at a purchase price of $1,000 per share, for aggregate gross proceeds of approximately $8.24 million, in a concurrent private placement (the "Private Placement" and, together with the Registered Direct Offering, the "July 2021 Offerings"). The shares of the Preferred Stock are convertible, upon shareholder approval as described below, into an aggregate of up to 93,636 shares of common stock at a conversion price of $880.00 per share. The Company also issued to the Investor an unregistered preferred investment option (the "Preferred Investment Option") that allows for the purchase of up to 113,636 shares of common stock for additional gross proceeds of approximately $10 million if the Preferred Investment Option is exercised in full. The Preferred Investment Option has a term equal to five and one-half years commencing upon the Company increasing its authorized common stock following shareholder approval, which was increased on March 15, 2022, following approval by the stockholders at a special meeting held on March 15, 2022.

In connection with the July 2021 Offerings, the Company entered into a registration rights agreement, dated as of July 13, 2021 (the "Registration Rights Agreement"), with the investor named therein, pursuant to which the Company will undertake to file, within five calendar days of the date of the filing of the proxy statement seeking the Stockholder Approval, a resale registration statement to register the shares of common stock issuable upon: (i) the conversion of the Preferred Stock sold in the Private Placement and (ii) the exercise of the Preferred Investment Option (collectively, the "Registrable Securities"); and to cause such registration statement to be declared effective under the Securities Act as promptly as possible after the filing thereof, but in any event no later than 75 days following the pricing date of this offering, or no later than 105 days following such date in the event of a "full review" by the SEC, and shall use its reasonable best efforts to keep such registration statement continuously effective under the Securities Act until the date that all Registrable Securities covered by such registration statement have been sold or are otherwise able to be sold pursuant to Rule 144.

The Registration Rights Agreement provides for liquidated damages to the extent that the Company does not file or maintain a registration statement in accordance with the terms thereof. The Registration Rights Agreement contains a triggering event which would require us to pay to any holder of the Preferred Stock an amount in cash, as partial liquidated damages and not as a penalty, on a monthly basis equal to the product of 2.0% multiplied by the aggregate subscription amount paid by such holder for shares of Preferred Stock pursuant to the Purchase Agreement; provided, however, that such partial liquidated damages shall not exceed 24% of the aggregate subscription amounts paid by such holders pursuant to the Purchase Agreement, or $1,977,600. If we fail to pay any partial liquidated damages within seven days after the date payable, we will be required to pay interest on any such amounts at a rate equal to the lesser of 18% per annum or the maximum rate permitted by applicable law.

The Company was required to hold a special shareholders meeting to approve an increase in authorized common shares to allow for conversion of preferred shares. At the first such meeting, held on September 23, 2021, the proposal was not approved by shareholders. On March 15, 2022,the Company held a special meeting of stockholders, which was originally opened and subsequently adjourned on September 23, 2021, at which meeting the Company's stockholders, by an affirmative vote of the majority of the Company's outstanding shares of capital stock, approved the amendment to the Company's Certificate of Incorporation to effect an increase in the number of shares of authorized common stock, par value $0.001 per share, from 41,666,666 shares to 62,393,940 shares, and to make a corresponding change to the number of authorized shares of capital stock in order to comply with the Company's contractual obligations under a securities purchase agreement entered into on July 13, 2021 (the "Authorized Share Increase Amendment").

On March 15, 2022, the Company filed a Certificate of Amendment to Restated Certificate of Incorporation with the Secretary of State of Delaware to effect the Authorized Share Increase Amendment.

For the year ended December 31, 2021, the Company incurred $1.1 million of liquidated damages, which included an accrual for estimated 2022 payments.

Interest Income

Interest income was $12,000 in the year ended December 31, 2022 and $17,000 in the year ended December 31, 2021. The variance between years is attributable primarily to the amount of funds available for investment each year and, to a lesser extent, changes in prevailing market interest rates.

Research and Development

There were no expenditures for research and development activities related to continuing operations in 2022 or 2021.

We do not currently project incurring any material research and development expenditures in 2023. Should the Company be successful in raising capital to further develop its LADR compounds along with a companion diagnostic, only then would the Company incur research and development expenditures.

All of our product candidates in development must be approved by the FDA or corresponding foreign governmental agencies before they can be marketed. The process for obtaining FDA and foreign government approvals is both time-consuming and costly, with no certainty of a successful outcome. A discussion of these and other risks and uncertainties associated with our business is set forth in the "Risk Factors" section of this prospectus.

Research and Development Expenses

Research and development expenses consist of costs incurred for direct and overhead-related research expenses and are expensed as incurred. Costs to acquire technologies, including licenses, that are utilized in research and development and that have no alternative future use are expensed when incurred. Technology developed for use in our product candidates is expensed as incurred until technological feasibility has been established.

Critical Accounting Policies and Estimates

Management's discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these consolidated financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, management evaluates its estimates, including those related to stock options, impairment of long-lived assets, including accrued liabilities and certain expenses. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from these estimates under different assumptions or conditions.

Our significant accounting policies are summarized in Note 2 to our audited financial statements contained in this prospectus for the year ended December 31, 2022. We believe the following critical accounting policies are affected by our more significant judgments and estimates used in the preparation of our consolidated financial statements:

Clinical Trial Expenses

Clinical trial expenses, which are included in research and development expenses, include obligations resulting from our contracts with various contract research organizations, or CROs, in connection with conducting clinical trials of our product candidates. We recognize expenses for these activities based on a variety of factors, including actual and estimated labor hours, clinical site initiation activities, patient enrollment rates, estimates of external costs and other activity-based factors. We believe that this method is the best measure of the efforts expended on a clinical trial with the expenses we record. We adjust our rate of clinical expense recognition if actual results differ from our estimates. If our estimates prove to be incorrect, clinical trial expenses recorded in any particular period could vary.

Stock-based Compensation

The fair value of our stock option and restricted stock grants is estimated using the Black-Scholes-Merton Option Pricing model, which uses certain assumptions related to risk-free interest rates, expected volatility, expected life of the stock options or restricted stock, and future dividends. Compensation expense is recorded based upon the value derived from the Black-Scholes-Merton Option Pricing model and based on actual experience. The assumptions used in the Black-Scholes-Merton Option Pricing model could materially affect compensation expense recorded in future periods.

Basic and Diluted Net Loss Per Share of Common Stock

Basic and diluted net loss per share of common stock is computed based on the weighted-average number of shares of common stock outstanding. for the period. Diluted net income (loss) per share is computed by dividing the net income (loss) applicable to common stockholders by the weighted average number of shares of common stock outstanding plus the number of additional shares of common stock that would have been outstanding if all dilutive potential common stock had been issued using the treasury stock method. Potential shares of common stock are excluded from the computation when their effect is antidilutive. Common stock equivalents that could potentially dilute net loss per share in the future, and which were excluded from the computation of diluted loss per share, were as follows:

	As of December 31,	
	2022	**2021**
Options to acquire common stock	17,651	28,278
Warrants to acquire common stock	42	42
Convertible preferred stock	31,277	93,637
Preferred Investment Option	113,636	113,636
	162,606	33,559

Going Concern

The Company's consolidated financial statements have been presented on the basis that it will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. During the year ended December 31, 2022, the Company incurred a net loss of $4.2 million, utilized cash in operations of $4.8 million, and the Company had a stockholders' deficit of $1.3 million as of December 31, 2022. In addition, the Company has no recurring revenue. As a result, management has concluded that there is substantial doubt about the Company's ability to continue as a going concern. The Company's consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

In order to fund our business and operations, we have relied primarily upon sales of our equity securities, including proceeds from the exercise of stock options and common stock purchase warrants and long-term loan financing. We also have received limited funding from our strategic partners and licensees. We will ultimately be required to obtain additional funding in order to execute our long-term business plans, although we do not currently have commitments from any third parties to provide us with long term debt or capital. We cannot assure that additional funding will be available on favorable terms, or at all. If we fail to obtain additional funding when needed, we may not be able to execute our business plans and our business may suffer, which would have a material adverse effect on our financial position, results of operations and cash flows. We have approximately $1.2 million of contractual obligations in 2023 and expect to pay these out of the Company's balance sheet cash. We have a total of approximately $1.9 million of material contractual obligations beyond 2023.

If ImmunityBio obtains marketing approval and successfully commercializes aldoxorubicin, we anticipate it will take two years, and possibly longer, for us to generate significant recurring revenue, and we will be dependent on future financing until such time, if ever, as we can generate significant recurring revenue. There are also no certainties that KemPharm will be successful in obtaining FDA and EMA approval for arimoclomol or choose to commercialize arimoclomol. We have no commitments from third parties to provide us with any additional financing, and we may not be able to obtain future financing on favorable terms, or at all. Failure to obtain adequate financing would adversely affect our ability to operate as a going concern. If we raise additional funds by issuing equity securities, dilution to stockholders may result and new investors could have rights superior to some or all of our existing equity holders. In addition, debt financing, if available, may include restrictive covenants. If adequate funds are not available to us, we may have to liquidate some or all of our assets or to delay or reduce the scope of or eliminate some portion or all of our development programs or clinical trials.

DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The following table sets forth information concerning our directors and executive officers:

Name[(1)]	Age	Class of Director[(2)]	Position
Jennifer K Simpson, Ph.D.	54	III	Chair of the Board[(4)]
Joel Caldwell	67	II	Director[(3)]
Cary Claiborne	62	I	Director[(3) (4)]
Stephen Snowdy, Ph.D.	54	—	Chief Executive Officer
John Y. Caloz	70	—	Chief Financial Officer and Senior Vice-President

(1) Dr. Simpson was appointed Chair of the Board on July 27, 2022.

(2) Our Class I director serves until the 2025 annual meeting of our stockholders; our Class II director serves until the 2023 annual meeting of our stockholders, and our Class III directors serve until the 2024 annual meeting of our stockholders.

(3) Members of our Audit Committee. Mr. Caldwell is Chairman of the Committee.

(4) Members of our Compensation Committee. Mr. Claiborne is Chairman of the Committee.

Joel Caldwell joined our Board on July 12, 2017. Mr. Caldwell brings more than 30 years of experience in tax matters, finance, and internal auditing. Mr. Caldwell retired from Southern California Edison, one of the nation's largest public utilities, where he had been employed for 28 years in various executive-level accounting and finance positions covering Internal Audits, Executive Compensation, Long Term Finance, Employee Benefits and, most recently prior to his retirement, Sarbanes-Oxley Internal Controls Compliance. He also worked in public accounting at the firm of Arthur Andersen& Co. In 1980, Mr. Caldwell earned his MBA with a major in finance from the University of California at Berkeley. Prior to that, Mr. Caldwell received a Bachelor of Science degree in Accounting and Finance, also from the University of California at Berkeley. Mr. Caldwell has been a Certified Public Accountant in California since 1982 and a Certified Internal Auditor since 1986. Mr. Caldwell volunteers his business skills, serving as a financial advisor on the board of trustees of a charitable organization, and continues his involvement with track and field sports by volunteering as a meet official at Pacific Palisades Charter High School. Mr. Caldwell is a member of both the American Institute of Certified Public Accountants and the California Society of Certified Public Accountants. Mr. Caldwell was appointed Lead Director on January 3, 2022.

Mr. Caldwell's diverse background in accounting, auditing and finance, along with his accreditation as a member of both the American Institute of Certified Public Accountants and the California Society of Certified Public Accountants will provide the board with a balanced perspective to enhance its stewardship and fulfill his role as the named financial expert on our Audit Committee.

Jennifer Simpson, Ph.D. joined our Board in July 2021. She was appointed Chair of the Board on July 27, 2022. Dr. Simpson serves as President and Chief Executive Officer and as a member of the board of directors of Panbela Therapeutics since July 2020. She most recently served as President and Chief Executive Officer and as a member of the board of directors of Delcath Systems, Inc. from 2015 to June 2020. She had previously held various other leadership roles at Delcath since 2012. From 2011 to 2012, Dr. Simpson served as Vice President, Global Marketing, Oncology Brand Lead at ImClone Systems, Inc. (a wholly owned subsidiary of Eli Lilly and Company), where she was responsible for all product commercialization activities and launch preparation for one of the late-stage assets. From 2009 to 2011, Dr. Simpson served as Vice President, Product Champion and from 2008 to 2009 as the Associate Vice President, Product Champion for ImClone's product Ramucirumab. From 2006 to 2008, Dr. Simpson served as Product Director, Oncology Therapeutics Marketing at Ortho Biotech (now Janssen Biotech), a Pennsylvania-based biotech company that focuses on innovative solutions in immunology, oncology and nephrology. Earlier in her career, Dr. Simpson spent over a decade as a hematology/oncology nurse practitioner and educator. Dr. Simpson has served on the board of directors and nominating and corporate governance committee of Eagle Pharmaceuticals, Inc. since August 2019. has been a director since July 2002 and has served as the Chairman of the Board's Compensation Committee since December 2016. Dr. Simpson's experience in the field of clinical development and oncology will be very helpful to the Board and the Company.

Cary Claiborne has served on the board of directors of NeuroSense Therapeutics since December 2021, where he also serves as chair of the audit committee. Mr. Claiborne has served as the Chief Executive Officer since August 18, 2022 and prior to that as Chief Operating officer since December 2021 and a director since November 2021 for Adial Pharmaceuticals Inc. a public biopharmaceutical company. Prior to joining Adial, Mr. Claiborne served as the CEO of Prosperity Capital Management, LLC, a US based Private Investment and Advisory firm that he founded. From 2014 until 2017, Mr. Claiborne served as the Chief Financial Officer and board member of Indivior PLC. a public global commercial stage pharmaceutical company. Mr. Claiborne was also a director on the Board of Directors of New Generation Biofuels Inc. and MedicAlert Foundation, where he also served as the chair of the audit and finance committees. From 2011 to 2014, Mr. Claiborne was the Chief Financial Officer of Sucampo Pharmaceuticals Inc., a public global biopharmaceutical company focused on drug discovery, development, and commercialization. Mr. Claiborne graduated from Rutgers University with a B.A. in Business Administration. He also holds an M.B.A from Villanova University and was previously a NACD Governance Fellow. His diverse background in the pharmaceutical industry and finance will provide the board with a balanced perspective and will be very helpful to the Board and the Company.

Stephen Snowdy, Ph.D. was appointed Chief Executive Officer on January 3, 2022, effective January 10, 2022. Dr. Snowdy is a scientist, serial entrepreneur and medical venture capitalist with two decades of experience in life science investing and executive management. Dr. Snowdy joins from Visioneering Technologies, Inc. (ASX: VTI), where he was Chief Executive Officer and Executive Director. Dr. Snowdy previously served as Chief Executive Officer at Abby Med LLC, a start-up pharmaceutical company dedicated to the development of a novel class of cancer drugs. Prior to that, Dr. Snowdy was Chairman and Chief Executive Officer of Calosyn Pharma, Inc., a Phase 2 osteoarthritis company, and was a partner for several years at a top-tier medical venture capital firm. Dr. Snowdy simultaneously earned a PhD in Neurobiology and an MBA from the University of North Carolina. Dr. Snowdy studied Chemical Engineering and Chemistry at the University of Florida, where he also completed two years of postbaccalaureate study in cardiopharmacology. His academic training followed service in the United States Navy Special Forces.

John Y. Caloz joined us in October 2007 as our Chief Accounting Officer. In January 2009, Mr. Caloz was named Chief Financial Officer and in August of 2020 was appointed Senior Vice-President. Mr. Caloz has a history of providing senior financial leadership in the life sciences sector, as Chief Financial Officer of Occulogix, Inc, a NASDAQ listed, medical therapy company. Prior to that, Mr. Caloz served as Chief Financial Officer of IRIS International Inc., a Chatsworth, CA based medical device manufacturer. Mr. Caloz served as Chief Financial Officer of San Francisco-based Synarc, Inc., a medical imaging company, and from 1993 to 1999 he was Senior Vice President, Finance and Chief Financial Officer of Phoenix International Life Sciences Inc. of Montreal, Canada, which was acquired by MDS Inc. in 1999. Mr. Caloz was a partner at Rooney, Greig, Whitrod, Filion& Associates of Saint Laurent, Quebec, Canada, a firm of Chartered Accountants specializing in research and development and high-tech companies from 1983 to 1993, Mr. Caloz, a Chartered Professional Accountant and Chartered Accountant, holds a degree in Accounting from York University, Toronto, Canada.

Family Relationships

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

Diversity

Our Board is responsible for assembling for stockholder consideration director-nominees who, taken together, have appropriate experience, qualifications, attributes, and skills to function effectively as a board. The Board periodically reviews its composition in light of our changing requirements, its assessment of its performance, and the input of stockholders and other key constituencies. The Board looks for certain characteristics common to all board members, including integrity, strong professional reputation and record of achievement, constructive and collegial personal attributes, and the ability and commitment to devote sufficient time and energy to board service. In addition, they seek to include on the Board a complementary mix of individuals with diverse backgrounds and skills reflecting the broad set of challenges that the Board confronts. These individual qualities can include matters such as experience in our company's industry, technical experience (*i.e.*, medical or research expertise), experience gained in situations comparable to the company's, leadership experience, and relevant geographical diversity.

Corporate Governance

Board Committees, Meetings and Attendance

Our business, property and affairs are managed by or under the direction of the board of directors. Members of the board are kept informed of our business through informal discussions with our chief executive and financial officers and other officers, by reviewing materials provided to them and by participating at meetings of the board and its committees.

Our Board currently has two committees, the Audit Committee, in accordance with section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended (the "Securities Act"), and the Compensation Committee. The Audit Committee consists of Mr. Caldwell and Mr. Claiborne. The Chairman of the Audit Committee is Mr. Caldwell. The Compensation Committee consists of Mr. Claiborne and Dr. Simpson. Mr. Claiborne is the Chairman of the Compensation Committee. The Audit Committee and the Compensation Committee operate under formal charters that govern their duties and conduct. Copies of the charters are available on our website at www.ladrx.com.

Our Board has determined that Mr. Caldwell, one of the independent directors serving on our Audit Committee, is an "audit committee financial expert" as defined by the SEC's rules. Our Board has determined that Mr. Claiborne and Mr. Caldwell are "independent" under the current independence standards of both The OTC Market and the SEC.

In the year ended December 31, 2022, the Board met five times, the Audit Committee met four times and the Compensation Committee met twice.

Section 16(a) Beneficial Ownership Reporting Compliance

Delinquent Section 16(a) Reports

Each of our executive officers and directors and persons who own more than 10% of our outstanding shares of common stock is required under Section 16 (a) of the Exchange Act to file with the SEC initial reports of ownership and reports of changes in ownership of our common stock and to furnish us with copies of those reports. To our knowledge, based solely on our review of copies of reports we have received and written representations from certain reporting persons, we do not believe that there were any delinquent filers. We believe our directors and executive officers and greater than 10% shareholders for the year ended December 31, 2022 complied with all applicable Section 16(a) filing requirements.

Code of Ethics

We have adopted a Code of Ethics applicable to all employees, including our principal executive officer, principal financial officer and principal accounting officer, a copy of which is available on our website at www.ladrx.com. We will furnish, without charge, a copy of our Code of Ethics upon request. Such requests should be directed to Attention: Corporate Secretary, 11726 San Vicente Boulevard, Suite 650, Los Angeles, California, or by telephone at 310-826-5648.

Board Structure

Our Certificate of Incorporation and our By-Laws provide for the classification of our directors into three classes, which we refer to as Class I, Class II and Class III, with each class to consist as nearly as possible of an equal number of directors. Our Class I director serves until the 2025 annual meeting of our stockholders, our Class II director serves until the 2023 annual meeting of our stockholders, and our Class III director serves until the 2024 annual meeting of our stockholders.

On July 27, 2022, our Board appointed Dr. Simpson as Chair of the Board. The Chair of the Board presides at all meetings of our Board (but not at its executive sessions), and exercises and performs such other powers and duties as may be assigned to him or her from time to time by the Board or prescribed by our By-Laws. On March 8, 2022, Dr. Ignarro, our previous Chairman of the Board, tendered his resignation from the Board, effective immediately prior to the 2022 Annual Meeting.

At the 2022 Annual Meeting, the Declassification Proposal to declassify the structure of the Board was passed on a precatory basis, which advised the Board that a majority of our stockholders desired to end the classified Board structure in favor of the annual election of directors, in which each director standing for election will only be eligible to be elected for one-year terms. The Board plans to adopt a resolution approving and declaring the advisability of amending our governing documents to the extent necessary to remove provisions that provide for a classified Board, subject to approval by our stockholders at the 2023 annual meeting of the stockholders. If passed, such a proposal would provide for a rolling declassification of the Board to be completed by the 2026 annual meeting of the stockholders.

Board of Directors Role in Risk Oversight

In connection with its oversight responsibilities, our Board, including the Audit Committee, periodically assesses the significant risks that we face. These risks include, but are not limited to, financial, technological, competitive, and operational risks. Our Board administers its risk oversight responsibilities through our Chief Executive Officer and Chief Financial Officer who review and assess the operations of our business, as well as operating management's identification, assessment and mitigation of the material risks affecting our operations.

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table presents summary information concerning all compensation paid or accrued by us for services rendered in all capacities during the years ended December 31, 2022 and 2021 by Stephen Snowdy, Steven A. Kriegsman and John Y. Caloz, who were considered our "Named Executive Officers" for the year ended December 31, 2022.

Summary Compensation Table

Name and Principal Position	Year	Salary ($)	Bonus ($) (2)	Option Awards ($)	All Other Compensation ($)	Total ($)
Stephen Snowdy, Ph.D.(1)						
Chief Executive Officer	2022	488,063	75,000	—(5)	—	563,063
	2021	—	—	—	—	—
Steven A. Kriegsman (1)						
Former Chief Executive Officer	2022	—	—	—	—(3)	—
	2021	850,000	150,000	—	6,013,700(4)	7,013,700
John Y. Caloz						
Chief Financial Officer, Treasurer and Senior Vice-President	2022	400,000	100,000	—	—	500,000
	2021	400,000	100,000	—	—	500,000

(1) Mr. Kriegsman stepped down from his position as Chief Executive Officer as of January 3, 2022.

(2) Bonuses paid to Dr. Snowdy, the current Chief Executive Officer were paid on a quarterly basis, beginning April 10, 2022 and the bonus paid to Mr. Caloz was paid in full in December of each applicable year.

(3) Mr. Kriegsman received a settlement payment of $6 million pursuant to the General Release and Separation Agreement (the "Kriegsman Separation Agreement"), dated January 3, 2022, by and between the Company and Mr. Kriegsman. The settlement payment was remitted to the payroll service in December 2021 and paid to Mr. Kriegsman on January 3, 2022.

(4) $13,700 represents life insurance premiums.

(5) On January 10, 2022, Dr. Snowdy was granted Stock Appreciation Rights ("SARs") relating to the appreciation of 300,000 shares of common stock of the Company at an exercise price of $0.64, the fair market value on the date of grant. These SARs vest equally over three years on the annual anniversary of the date of grant.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth outstanding equity awards held by our Named Executive Officers as of December 31, 2022 issued under our 2008 Plan and our 2019 Plan:

Name	Number of Securities Underlying Options Exercisable	Number of Securities Underlying Unexercised Options	Option Exercise Price ($)	Option Expiration Date
John Y. Caloz	3,500		26.00	12/12/29
Chief Financial Officer, Treasurer and Senior Vice-President	583		175.00	12/14/27
	583		258.00	12/14/26
	500		1,464.00	12/14/25
	333		1,290.00	12/14/24
	250(1)		2,796.00	12/09/23

(1) The options were re-priced from $1,434.00 to $2,796.00 on June 1, 2015, with no change to the expiration date of the options.

2022 Grants of Plan-Based Awards

No stock options or restricted stock were granted in 2022.

2008 Stock Incentive Plan and the 2019 Stock Incentive Plan

The purpose of our 2008 Stock Incentive Plan, (the "2008 Plan"), and our 2019 Stock Incentive Plan, (the "2019 Plan"), and together with the 2008 Plan, (the "Plans") is to promote our success and enhance our value by linking the personal interests of our employees, officers, consultants and directors to those of our stockholders. The 2008 Plan was adopted by our Board on November 21, 2008 and by our stockholders on July 1, 2009 with certain amendments to the 2008 Plan having been subsequently approved by our Board and stockholders. The 2019 Plan was adopted by our Board on November 15, 2019.

2008 Plan and the 2019 Plan Descriptions

The Plans are administered by the Compensation Committee of our Board. The Compensation Committee has the power, authority and discretion to:

- designate participants;
- determine the types of awards to grant to each participant and the number, terms and conditions of any award;

- establish, adopt or revise any rules and regulations as it may deem necessary or advisable to administer the Plans; and
- make all other decisions and determinations that may be required under, or as the Compensation Committee deems necessary or advisable to administer, the Plans.

Awards under the 2008 Plan

The 2008 Plan expired on November 20, 2018, and thus no shares are available for future grant under the 2008 Plan.

Awards under the 2019 Plan

The following is a summary description of financial instruments that may be granted to participants in our 2019 Plan by the Compensation Committee of our Board.

Stock Options. The Compensation Committee is authorized to grant non-qualified stock options. The terms of any incentive stock option must meet the requirements of Section 422 of the Internal Revenue Code. The exercise price of an option may not be less than the fair market value of the underlying stock on the date of grant, and no option may have a term of more than 10 years from the grant date.

Restricted Stock. The Compensation Committee may make awards of restricted stock, which will be subject to forfeiture to us and other restrictions as the Compensation Committee may impose.

Stock Bonus Awards. The Compensation Committee may make awards of stock bonus awards in consideration for past services actually rendered, which will be subject to repurchase by us and such other terms as the Compensation Committee may impose.

Limitations on Transfer; Beneficiaries. Stock Option awards under the 2019 Plan may generally not be transferred or assigned by participants other than by will or the laws of descent and distribution. Awards of Restricted Stock or Stock Bonus awards may be transferred or assigned only upon such terms and conditions as set forth in the award agreement or as determined by the Compensation Committee in its discretion.

Acceleration Upon Certain Events. In the event of a “Corporate Transaction” as defined in the 2019 Plan, all outstanding options will become fully vested, subject to the holder’s consent with respect to incentive stock options, and exercisable and all restrictions on all outstanding awards will lapse. Unless the surviving or acquiring entity assumes the awards in the Corporate Transaction or the stock award agreement provides otherwise, the stock awards will terminate if not exercised at or prior to the Corporate Transaction.

Termination and Amendment

Our Board or the Compensation Committee may, at any time and from time to time, terminate or amend the 2019 Plan without stockholder approval; provided, however, that our Board or the Compensation Committee may condition any amendment on the approval of our stockholders if such approval is necessary or deemed advisable with respect to tax, securities or other applicable laws, policies or regulations. No termination or amendment of the Plans may adversely affect any award previously granted without the written consent of the participants affected. The Compensation Committee may amend any outstanding award without the approval of the participants affected, except that no such amendment may diminish or impair the value of an award.

Employment Agreements and Potential Payment upon Termination or Change in Control

Employment Agreements with Stephen Snowdy

2022 Snowdy Employment Agreement

On January 3, 2022, the Company entered into an employment agreement, effective January 10, 2022 (the "Effective Date"), with Dr. Stephen Snowdy, under which the Company agreed to employ Dr. Snowdy as its Chief Executive Officer through December 31, 2022 (the "Snowdy Employment Agreement"). Pursuant to the Snowdy Employment Agreement, Dr. Snowdy is entitled to a base annual salary of $500,000. Dr. Snowdy also is entitled to receive a signing bonus of $100,000, payable in four quarterly installments, with the first installment to be paid on the date that is 90 days following the Effective Date, and an annual bonus to be determined by the Board in its sole discretion, based on certain performance criteria as established by the Board, with such bonus payable no later than the last regular payroll in 2022. Dr. Snowdy is also eligible to receive a bonus of up to 3.0% of the amount of non-broker assisted funding raised to fund Centurion on terms acceptable to both the Board of Centurion and LadRx. The Snowdy Employment Agreement also entitles Dr. Snowdy to receive customary benefits and reimbursement for ordinary business expenses. In connection with Dr. Snowdy's appointment and as a further inducement to enter into the Snowdy Employment Agreement, the Company granted Dr. Snowdy 3,000 cash-based stock appreciation rights with a base price equal to the closing price of the Company's common stock on the date of grant, subject to the terms and conditions of the Company's form of cash-based stock appreciation rights agreement, which terms shall include vesting in three substantially equal tranches on the first, second and third anniversary of the Effective Date.

Under the Snowdy Employment Agreement, Dr. Snowdy is also eligible to receive nonqualified stock options equal to 2% of the fully diluted common stock of Centurion with an exercise price equal to the fair market value of Centurion on the date of grant, subject to the terms and conditions of a grant agreement. In the event Dr. Snowdy's employment is terminated without "cause" or due to "disability" (each term as defined in the Snowdy Employment Agreement) or death, the Company has agreed to (i) pay Dr. Snowdy or his heirs or personal representatives, as applicable, a lump-sum severance amount equal to six months' base annual salary, or twelve months' base annual salary if Dr. Snowdy's employment is terminated without "cause" following a "change in control" (each term as defined in the Snowdy Employment Agreement), and (ii) continue the participation, at the Company's cost, for a period of six months, or twelve months if the Snowdy Employment Agreement is terminated without "cause" following a "change in control", of Dr. Snowdy and his dependents in the employee benefits plan in which Dr. Snowdy was participating. In the event Dr. Snowdy's employment is terminated without "cause", all of Dr. Snowdy's vested stock options and any other vested equity awards will remain exercisable for their full term notwithstanding the termination of his employment. In the event Dr. Snowdy's employment is terminated due to Dr. Snowdy's "disability" or death, all of Dr. Snowdy's unvested stock options and other equity awards based on the Company's securities will immediately vest in full and all of Dr. Snowdy's stock options and any other equity awards will remain exercisable for their full term notwithstanding the termination of his employment. Dr. Snowdy may also terminate the Employment Agreement for good reason.

2023 Snowdy Employment Agreement

On December 30, 2022, the Company entered into a new employment agreement with Dr. Stephen Snowdy, effective as of January 1, 2023 (the "2023 Snowdy Employment Agreement"), pursuant to which the Company agreed to continue to employ Dr. Snowdy as its Chief Executive Officer through December 31, 2025, unless terminated sooner in accordance with the terms of the 2023 Snowdy Employment Agreement (the "Snowdy Term"). In the event that Dr. Snowdy's employment has not been terminated and the Company has not offered to extend or renew Dr. Snowdy's employment under the 2023 Snowdy Employment Agreement upon expiration of the Snowdy Term, in lieu of any other severance benefits as provided in the 2023 Snowdy Employment Agreement, the Company shall continue to pay Dr. Snowdy his salary commencing on the final date of the Snowdy Term and ending on (a) June 30, 2026, or (b) the date of Dr. Snowdy's re-employment with another employer, whichever is earlier; provided that Dr. Snowdy shall have executed and delivered to the Company a General Release of All Claims. Pursuant to the 2023 Snowdy Employment Agreement, Dr. Snowdy is entitled to receive an annual salary of $520,000, less applicable payroll deductions and tax withholdings. Dr. Snowdy also is eligible for an annual target performance based bonus (the "Snowdy Target Bonus"), equal to 50% of Dr. Snowdy's annual salary during the Snowdy Term, with such bonus dependent in part on the Company's performance and the Compensation Committee's discretion in assessing Dr. Snowdy's individual performance in relation to his objectives as determined by the Company's Board of Directors and the overall performance and status of the Company, payable no later than February 28th of the calendar year following the calendar year in which the Snowdy Target Bonus relates.

The 2023 Snowdy Employment Agreement also entitles Dr. Snowdy to receive customary benefits and reimbursement for ordinary business expenses. In the event Dr. Snowdy's employment is terminated without cause, due to disability or death, or due to good reason by Dr. Snowdy (each term as defined in the 2023 Snowdy Employment Agreement), the Company has agreed to, among other things, (i) pay Dr. Snowdy or his heirs or personal representatives, as applicable, a lump-sum severance amount equal to twelve months' base annual salary and an amount equal to the prorated portion of the Snowdy Target Bonus for the year in which the termination occurred based on the number of days Dr. Snowdy was employed, or an amount equal to eighteen months' annual salary and the full Snowdy Target Bonus amount if such termination occurs within six months prior to or within twelve months following a change in control; and (ii) reimburse Dr. Snowdy and his dependents all premiums associated with Dr. Snowdy's continuation of health insurance pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1986 ("COBRA"), subject to certain conditions. In the event Dr. Snowdy's employment is terminated without cause or by Dr. Snowdy due to good reason, all of Dr. Snowdy's vested stock options and any other vested equity awards will remain exercisable for their full term notwithstanding the termination of his employment. In the event Dr. Snowdy's employment is terminated due to disability or death, all of Dr. Snowdy's unvested stock options and other equity awards based on the Company's securities will immediately vest in full and all of Dr. Snowdy's stock options and any other equity awards will remain exercisable for their full term notwithstanding the termination of his employment.

Employment Agreements with John Y. Caloz

John Y. Caloz is employed as our Chief Financial Officer, Treasurer and Senior Vice-President pursuant to an employment agreement (the "Caloz Employment Agreement") dated as of December 16, 2021, that expired on December 31, 2022. Mr. Caloz is paid an annual base salary of $400,000 and is eligible to receive an annual bonus as determined by our Board (or our Compensation Committee) in its sole discretion, but not to be less than $100,000. In the event we terminate Mr. Caloz's employment without cause (as defined in the Caloz Employment Agreement), we have agreed to pay him a lump-sum equal to his accrued but unpaid salary and vacation, plus an amount equal to six months' salary under his employment agreement.

Pursuant to the Caloz Employment Agreement, if the Company does not offer to renew or extend the Caloz Employment Agreement, and that Mr. Caloz's employment had not theretofore been terminated, we will continue to pay him his annual salary thereunder during the period commencing upon expiration of the Caloz Employment Agreement and ending on June 30, 2023.

2023 Caloz Employment Agreement

On December 30, 2022, the Company entered into a new employment agreement with John Y. Caloz, effective January 1, 2023 (the "2023 Caloz Employment Agreement"), pursuant to which the Company agreed to continue to employ Mr. Caloz as its Chief Financial Officer and Senior Vice President through December 31, 2025, unless terminated sooner in accordance with the 2023 Caloz Employment Agreement (the "Caloz Term"). In the event that Mr. Caloz's employment has not been terminated and the Company has not offered to extend or renew Mr. Caloz's employment under the 2023 Caloz Employment Agreement upon expiration of the Caloz Term, in lieu of any other severance benefits as provided in the 2023 Caloz Employment Agreement, the Company shall continue to pay Mr. Caloz his salary commencing on the final date of the Caloz Term and ending on (a) June 30, 2026, or (b) the date of Mr. Caloz's re-employment with another employer, whichever is earlier; provided that Mr. Caloz shall have executed and delivered to the Company a General Release of All Claims. Pursuant to the 2023 Caloz Employment Agreement, Mr. Caloz is entitled to receive an annual salary of $416,000, less applicable payroll deductions and tax withholdings. Mr. Caloz also is eligible for an annual target performance-based bonus (the "Caloz Target Bonus"), equal to 40% of Mr. Caloz's annual salary during the Caloz Term, with such bonus dependent in part on the Company's performance and the Compensation Committee's discretion in assessing Mr. Caloz's individual performance in relation to his objectives as determined by the Board and the overall performance and status of the Company, payable no later than February 28th of the calendar year following the calendar year in which the Caloz Target Bonus relates.

The 2023 Caloz Employment Agreement also entitles Mr. Caloz to receive customary benefits and reimbursement for ordinary business expenses. In the event Mr. Caloz's employment is terminated without cause, due to disability or death, or due to good reason by Mr. Caloz (each term as defined in the 2023 Caloz Employment Agreement), the Company has agreed to, among other things, (i) pay Mr. Caloz or his heirs or personal representatives, as applicable, a lump-sum severance amount equal to twelve months' base annual salary and an amount equal to the prorated portion of the Caloz Target Bonus for the year in which the termination occurred based on the number of days Mr. Caloz was employed, or an amount equal to eighteen months' annual salary and the full Caloz Target Bonus amount if such termination occurs within six months prior to or within twelve months following a change in control; and (ii) reimburse Mr. Caloz and his dependents for all Medicare premiums and premiums associated with Mr. Caloz continuation of health insurance pursuant to COBRA, subject to certain conditions. In the event Mr. Caloz's employment is terminated without cause or by Mr. Caloz due to good reason, all of Mr. Caloz's vested stock options and any other vested equity awards will remain exercisable for their full term notwithstanding the termination of his employment. In the event Mr. Caloz's employment is terminated due to disability or death, all of Mr. Caloz's unvested stock options and other equity awards based on the Company's securities will immediately vest in full and all of Mr. Caloz's stock options and any other equity awards will remain exercisable for their full term notwithstanding the termination of his employment.

Quantification of Termination Payments and Benefits

In January 2022, in connection with the Kriegsman Separation Agreement, Mr. Kriegsman's executive employment agreement (the "Kriegsman Employment Agreement"), dated as of March 26, 2019, by and between the Company and Mr. Kriegsman, was terminated; provided, however, that certain surviving customary confidentiality provisions and milestone and royalty payments as defined in the Kriegsman Employment Agreement remain in full force and effect. Pursuant to the Kriegsman Separation Agreement, Mr. Kriegsman received a lump sum cash payment equal to approximately $6.0 million. This amount was accrued in the Company's financial results for the year ended December 31, 2021; however, the payment was made in January 2022. In addition, Mr. Kriegsman was entitled to receive continuing health benefits and life insurance premiums for 2022 and 2023 at an approximate cost of $43,000 per year. These future payments were also accrued in the Company's financial results for the year ended December 31, 2021.

Compensation of Directors

We use a combination of cash and stock-based compensation to attract and retain qualified candidates to serve on our Board. Directors who also are employees of our company currently receive no compensation for their service as directors or as members of board committees. In setting director compensation, we consider the significant amount of time that directors dedicate to the fulfillment of their director responsibilities, as well as the competency and skills required of members of our board. The directors' annual compensation year begins with the annual election of directors at the annual meeting of stockholders. Periodically, our Board reviews our director compensation policies and, from time to time, makes changes to such policies based on various criteria the board deems relevant. For 2023, the Board implemented an increase of 4 percent in their compensation.

The non-employee director who serves as Chair of the Board receives a quarterly retainer of $6,250. Our non-employee directors receive a quarterly retainer of $6,000 (plus an additional $5,000 for the Chairmen of the Audit and Compensation Committees), a fee of $4,000 for each Board meeting attended (or $750 for Board actions taken by unanimous written consent) and $3,000 for each meeting of the Audit Committee and $2,500 for each meeting of the Compensation Committee attended. Non-employee directors who serve as the chairman of a board committee receive an additional $3,000 for each Audit Committee meeting they chair and an additional $4,500 for each Compensation Committee meeting they chair and the non-employee director who serves as chairperson of the Board receives an additional $4,000 for each meeting attended. These fees will increase by 4 percent commencing January 2023.

The following table sets forth the compensation paid to our directors other than our Chief Executive Officer for the year ended December 31, 2022:

Director Compensation Table

Name (1)	Fees Earned or Paid in Cash ($) (2)	Total ($)
Louis Ignarro, Ph.D., Former Chairman of the Board	71,000	71,000
Cary Claiborne, Director	31,000	31,000
Joel Caldwell, Director	98,250	98,250
Jennifer Simpson, Ph.D., Chair of the Board (3)	69,416	69,416

(1) On January 3, 2022, Mr. Kriegsman stepped down as Chairman of the Board and Dr. Ignarro was appointed Chairman of the Board. On July 27, 2022, Dr. Simpson replaced Dr. Ignarro as Chair of the Board following Dr. (Ignarro's resignation from the Board. Mr. Claiborne was appointed to the Board effective July 27, 2022. For information relating to Mr. Kriegsman's compensation as Chief Executive Officer, see the Summary Compensation Table above. Mr. Kriegsman resigned from his position as director on March 8, 2022.

(2) The amounts in this column represent cash payments made to Non-Employee Directors for annual retainer fees, committee and/or chairmanship fees and meeting fees during the year.

(3) On December 15, 2021, Dr. Simpson was granted SARs relating to the appreciation of 500 shares of common stock of the Company at an exercise price of $45.00, the fair market value of the Company's common stock on the date of grant. The SARs vested in full on December 15, 2022.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Based solely upon information made available to us, the following table sets forth information with respect to the beneficial ownership of our common stock as of March 22, 2023 by (1) each person who is known by us to beneficially own more than five percent of our common stock; (2) each of our directors; (3) the Named Executive Officers listed in the Summary Compensation Table under Item 11 who were serving as Named Executive Officers as of March 22, 2023; and (4) all of our executive officers and directors as a group. Beneficial ownership is determined in accordance with the SEC rules. Shares of common stock subject to any warrants or options that are presently exercisable, or exercisable within 60 days of March 22, 2023 (which are indicated by footnote) are deemed outstanding for the purpose of computing the percentage ownership of the person holding the warrants or options, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person. The percentage ownership reflected in the table is based on 465,874 shares of our common stock outstanding as of March 22, 2023. Except as otherwise indicated, the holders listed below have sole voting and investment power with respect to all shares of common stock shown, subject to applicable community property laws. An asterisk represents beneficial ownership of less than 1%.

Name and Address of Beneficial Owner (5)	Amount and Nature of Beneficial Ownership (Common Stock)	Percent of Class (Common Stock)
Named Executive Officers and Directors		
Cary Claiborne	—	0.0%
Joel Caldwell	3,354	*(1)
Jennifer Simpson, Ph.D.	250	*
Stephen Snowdy, Ph.D.	—	0.0%
John Y. Caloz	5,7588	% 1.2(2)
All executive officers and directors as a group (five persons)	51,949	% 2.0(3)
5% Beneficial Owners		
Armistice Capital, LLC	46,243	% 9.9(4)

(1) Includes 600 shares of common stock issuable upon the exercise of certain stock options.

(2) Includes 575 shares of common stock issuable upon the exercise of certain stock options.

(3) Includes 635 shares of common stock issuable upon the exercise of certain stock options.

(4) Based on the Schedule 13(G/A) filed on February 14, 2023.

(5) The address of each of the below listed Named Executive Officers and directors is the Company's business address located at 11726 San Vicente Blvd, Ste 650, Los Angeles, CA 90049.

Equity Compensation Plans

See "Executive Compensation—2008 Stock Incentive Plan and the 2019 Stock Incentive Plan".

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Director Independence

Although the Company is no longer listed on Nasdaq, our Board has determined that Dr. Simpson, Mr. Caldwell and Mr. Claiborne are "independent" under the current independence standards of both Nasdaq and the SEC, and have no material relationships with us (either directly or as a partner, shareholder or officer of any entity) that are inconsistent with a finding of their independence as members of our Board. Our Board has determined that Mr. Claiborne and Mr. Caldwell also are "independent" for purposes of service as the members of our Audit Committee. In making these determinations, our Board has broadly considered all relevant facts and circumstances, recognizing that material relationships can include commercial, banking, consulting, legal, accounting, and familial relationships, among others.

Transactions with Related Persons

Our Audit Committee is responsible for reviewing and approving, as appropriate, all transactions with related persons, in accordance with its Charter.

Transactions between us and one or more related persons may present risks or conflicts of interest or the appearance of conflicts of interest. Our Code of Ethics requires all employees, officers and directors to avoid activities or relationships that conflict, or may be perceived to conflict, with our interests or adversely affect our reputation. It is understood, however, that certain relationships or transactions may arise that would be deemed acceptable and appropriate so long as there is full disclosure of the interest of the related parties in the transaction and review and approval by disinterested directors to ensure there is a legitimate business reason for the transaction and that the transaction is fair to us and our stockholders.

As a result, the procedures followed by the Audit Committee to evaluate transactions with related persons require:

- that all related person transactions, all material terms of the transactions, and all the material facts as to the related person's direct or indirect interest in, or relationship to, the related person transaction must be communicated to the Audit Committee; and

- that all related person transactions, and any material amendment or modification to any related person transaction, be reviewed and approved or ratified by the Audit Committee, as required by OTC Market Rules.

Our Audit Committee will evaluate related person transactions based on:

- information provided by members of our Board in connection with the required annual evaluation of director independence;

- pertinent responses to the Directors' and Officers' Questionnaires submitted periodically by our officers and directors and provided to the Audit Committee by our management; and

- any other relevant information provided by any of our directors or officers.

- In connection with its review and approval or ratification, if appropriate, of any related person transaction, our Audit Committee is to consider whether the transaction will compromise standards included in our Code of Ethics. In the case of any related person transaction involving an outside director or nominee for director, the Audit Committee also is to consider whether the transaction will compromise the director's status as an independent director as prescribed in the OTC Market Rules.

DESCRIPTION OF SECURITIES TO BE REGISTERED

As of March 31, 2023, we have authorized 63,227,273 shares of capital stock, par value $0.001 per share, of which 62,393,940 are shares of common stock and 833,333 are shares of "blank check" preferred stock, par value $0.01 per share, of which 50,000 are authorized as Series B Junior Participating Preferred Stock and 1,410 are authorized as Series C Preferred Stock. As of March 31, 2023, there were 465,874 shares of common stock issued and outstanding, 1,410 shares of Series C Preferred Stock issued and outstanding. We have reserved all of the shares of our Series B Junior Participating Preferred Stock for issuance upon the exercise of the rights under our Shareholder Protection Rights Agreement, described below. The authorized and unissued shares of common stock and the authorized and undesignated shares of preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. Unless approval of our stockholders is so required, our Board does not intend to seek stockholder approval for the issuance and sale of our common stock or preferred stock.

The following summaries of certain provisions of our securities does not purport to be complete. You should refer to our Certificate of Incorporation and our By-Laws, which are filed with or incorporated by reference in the registration statement relating to this offering filed by us with the SEC. The summary below is also qualified by reference to the provisions of applicable Delaware corporation law.

Units

Each Unit consists of one share of common stock and one Warrant to purchase [ ] share of common stock. Each whole warrant entitles the holder thereof to purchase one share of common stock at a price of $[ ] per share.

Each share of common stock and accompanying Warrant included in each unit will be immediately separable upon issuance and will be issued separately. The units will not be issued or certificated. We are also registering the shares of common stock included in the units and the shares of common stock issuable from time to time upon exercise of the Warrants included in the units offered hereby.

Common Stock

Holders of our common stock are entitled to one vote per share on matters on which our stockholders vote, including with respect to the election of directors. Holders of common stock are entitled to receive dividends, if declared by our Board, out of funds that we may legally use to pay dividends. If we liquidate or dissolve, holders of common stock are entitled to share ratably in our assets once our debts and any liquidation preference owed to holders of any then-outstanding preferred stock are paid. All shares of common stock that are outstanding as of the date of this prospectus supplement are, and all shares we are selling in this offering, upon their issuance and sale, will be fully-paid and nonassessable. Holders of our common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions with respect to our common stock.

Warrants

The following description of the Warrants we are offering is a summary and is qualified in its entirety by reference to the provisions of the Warrant, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part.

Duration and Exercise Price

Each Warrant offered hereby will have an initial exercise price per share equal to $. The Warrant will be immediately exercisable and will expire on the [ ] anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our shares of common stock and the exercise price. Pursuant to a warrant agency agreement between us and American Stock Transfer & Trust Company, as warrant agent, the Warrants will be issued in book-entry form and shall initially be represented only by one or more global warrants deposited with the warrant agent, as custodian on behalf of The Depository Trust Company, or DTC, and registered in the name of Cede& Co., a nominee of DTC, or as otherwise directed by DTC.

Exercisability

The Warrants will be exercisable, at the option of the holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of common stock purchased upon such exercise (except in the case of a cashless exercise, as discussed below). A holder (together with its affiliates) may not exercise any portion of the Warrant to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding shares of common stock immediately after exercise. However, upon notice from the holder to us, the holder may decrease or increase the holder's beneficial ownership limitation, which may not exceed 9.99% of the number of outstanding shares of common stock immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Warrants, provided that any increase in the beneficial ownership limitation will not take effect until 61 days following notice to us. Purchasers in this offering may also elect, prior to the issuance of the Warrants, to have the initial exercise limitation set at 9.99% of our outstanding shares of common stock. No fractional shares will be issued in connection with the exercise of a Warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round down to the next whole share.

Cashless Exercise

If, at the time a holder exercises its Warrants, a registration statement registering the issuance of the shares of common stock underlying the Warrants under the Securities Act is not then effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the common Warrants.

Transferability

Subject to applicable laws, a Warrant may be transferred at the option of the holder upon surrender of the Warrant to us together with the appropriate instruments of transfer.

Right as a Stockholder

Except as otherwise provided in the Warrants or by virtue of such holder's ownership of our shares of common stock, the holders of the Warrants do not have the rights or privileges of holders of our shares of common stock, including any voting rights, until they exercise their Warrants.

Fundamental Transaction

In the event of a fundamental transaction, as described in the Warrants and generally including any reorganization, recapitalization or reclassification of our shares of common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding shares of common stock, or any person or group becoming the beneficial owner of more than 50% of the voting power represented by our outstanding shares of common stock, the holders of the Warrants will be entitled to receive upon exercise of the Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Warrants immediately prior to such fundamental transaction. Additionally, as more fully described in the Warrant, in the event of certain fundamental transactions, the holders of the Warrants will be entitled to receive consideration in an amount equal to the Black Scholes value of the Warrants on the date of consummation of the transaction.

Anti-Takeover Measures

Delaware Law

Section 203 of the General Corporation Law of the State of Delaware is applicable to takeovers of certain Delaware corporations, including us. Subject to exceptions enumerated in Section 203, Section 203 provides that a corporation shall not engage in any business combination with any "interested stockholder" for a three-year period following the date that the stockholder becomes an interested stockholder unless:

- prior to that date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, though some shares may be excluded from the calculation; or

- on or subsequent to that date, the business combination is approved by the board of directors of the corporation and by the affirmative votes of holders of at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

Except as specified in Section 203, an interested stockholder is generally defined to include any person who, together with any affiliates or associates of that person, beneficially owns, directly or indirectly, 15% or more of the outstanding voting stock of the corporation, or is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation, any time within three years immediately prior to the relevant date. Under certain circumstances, Section 203 makes it more difficult for an interested stockholder to effect various business combinations with a corporation for a three-year period, although the stockholders may elect not to be governed by this section, by adopting an amendment to our Certificate of Incorporation or By-Laws, effective 12 months after adoption. Our Certificate of Incorporation and By-Laws do not opt out from the restrictions imposed under Section 203. We anticipate that the provisions of Section 203 may encourage companies interested in acquiring us to negotiate in advance with the Board because the stockholder approval requirement would be avoided if a majority of the directors then in office excluding an interested stockholder approve either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder. These provisions may have the effect of deterring hostile takeovers or delaying changes in control, which could depress the market price of our common stock and deprive stockholders of opportunities to realize a premium on shares of common stock held by them.

Certificate of Incorporation and By-Law Provisions

In addition to our Board's ability to issue shares of preferred stock, our Certificate of Incorporation and By-Laws contain the following provisions that may have the effect of discouraging unsolicited acquisition proposals:

- our By-Laws classify the Board into three classes with staggered three-year terms;

- under our By-Laws, our Board may enlarge the size of the Board and fill the vacancies;

- our By-Laws provide that a stockholder may not nominate candidates for the Board at any annual or special meeting unless that stockholder notifies us of its intention a specified period in advance and provides us with certain required information;

- stockholders who wish to bring business before the stockholders at our annual meeting must provide advance notice;

- Our By-Laws provide that stockholders may only act by written consent in lieu of a meeting if such consent is unanimous; and

- our By-Laws provide that special meetings of stockholders may only be called by our Board or by an officer so instructed by our Board.

Our By-Laws also provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for:

- any derivative action or proceeding brought on our behalf;

- any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the company to us or our stockholders;
- any action asserting a claim arising pursuant to any provision of the General Corporation Law of the State of Delaware; or
- any action asserting a claim governed by the internal affairs doctrine.
- Our By-Laws further provide that any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of the company is deemed to have notice of and consented to the foregoing provision.

Shareholder Protection Rights Agreement

On December 13, 2019, the Board authorized and declared a dividend of one right (a "Right") for each of our issued and outstanding shares of common stock. The dividend was paid to the stockholders of record at the close of business on December 23, 2019. Each Right entitled the registered holder, subject to the terms of the Original Rights Agreement (as defined below), to purchase from us one one-thousandth of a share of our Series B Preferred Stock, par value $0.01 per share, at a price of $5.00, subject to certain adjustments. The description and terms of the Rights were set forth in the Rights Agreement, dated as of December 13, 2019 (the "Original Rights Agreement"), by and between us and American Stock Transfer & Trust Company, LLC, as Rights Agent.

On November 12, 2020, the Board approved an amendment and restatement of the Original Rights Agreement (as amended and restated, the "Amended and Restated Rights Agreement") to effect certain changes to the Original Rights Agreement, including (i) reducing the duration to a term of three years, subject to certain earlier expiration as described in more detail below, and (ii) lowering the beneficial ownership threshold at which a person or group of persons becomes an Acquiring Person (as defined below) to 4.95% or more of our outstanding shares of common stock, subject to certain exceptions. The Amended and Restated Rights Agreement is designed to discourage (i) any person or group of persons from acquiring beneficial ownership of more than 4.95% of our shares of common stock and (ii) any existing stockholder currently beneficially holding 4.95% or more of our shares of common stock from acquiring additional shares of our common stock.

The purpose of the Amended and Restated Rights Agreement is to protect value by preserving our ability to utilize certain net operating losses and other tax attributes (collectively, the "Tax Benefits") to offset potential future income tax obligations. Our ability to use these Tax Benefits would be substantially limited if we experience an "ownership change," as such term is defined in Section 382 of the Internal Revenue Code of 1986, as amended (the "Tax Code"). A corporation generally will experience an ownership change if the percentage of the corporation's stock owned by its "5-percent shareholders," as defined in Section 382 of the Tax Code, increases by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. The Amended and Restated Rights Agreement is intended to reduce our likelihood of experiencing an ownership change under Section 382 of the Tax Code. The Rights are only exercisable upon the occurrence of certain triggering events described in the Amended and Restated Rights Agreement.

Listing

Our common stock is quoted on the OTCQB market tier of the OTC Markets under the symbol "LADX". The closing price of our common stock on _________, 2023 was $_______ per share (assuming an anticipated reverse stock split of 1-for-100). We intend to apply to list our common stock and the Warrants on Nasdaq under the symbols "LADX" and "LADX-W", respectively. No assurance can be given that an active trading market will develop for the common stock or Warrants. We believe that upon the completion of the offering contemplated by this prospectus, we will meet the standards for listing on Nasdaq. We cannot guarantee that we will be successful in listing our common stock or our Warrants on Nasdaq; however, we will not complete this offering unless we are so listed.

Transfer Agent and Warrant Agent

The transfer agent for our common stock is American Stock Transfer & Trust Company, located at 6201 15th Ave, Brooklyn, New York 11219. American Stock Transfer & Trust Company will also be the warrant agent in connection with the warrants to be issued in this offering.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS

The following is a summary of the material U.S. federal income tax considerations relating to the purchase, ownership and disposition of our common stock and Warrants purchased in this offering but is for general information purposes only and does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Internal Revenue Code of 1986, as amended (the "Code"), existing and proposed Treasury regulations promulgated thereunder, administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed, possibly retroactively, so as to result in U.S. federal income and estate tax consequences different from those set forth below. There can be no assurance that the Internal Revenue Service (the "IRS") will not challenge one or more of the tax consequences described herein, and we have not obtained, and do not intend to obtain, an opinion of counsel or ruling from the IRS with respect to the U.S. federal income tax considerations relating to the purchase, ownership or disposition of our common stock or Warrants.

This summary does not address any alternative minimum tax considerations, any considerations regarding the tax on net investment income, or the tax considerations arising under the laws of any state, local or non-U.S. jurisdiction, or under any non-income tax laws, including U.S. federal gift and estate tax laws, except to the limited extent set forth below. In addition, this summary does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies or other financial institutions;
- tax-exempt organizations or governmental organizations;
- regulated investment companies and real estate investment trusts;
- controlled foreign corporations, passive foreign investment companies and corporations that accumulate earnings to avoid U.S. federal income tax;
- brokers or dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons that own, or are deemed to own, more than five percent of our capital stock (except to the extent specifically set forth below);
- tax-qualified retirement plans;
- certain former citizens or long-term residents of the United States;
- partnerships or entities or arrangements classified as partnerships for U.S. federal income tax purposes and other pass-through entities (and investors therein);
- persons who hold our common stock or Warrants as a position in a hedging transaction, "straddle," "conversion transaction" or other risk reduction transaction or integrated investment;
- persons who hold or receive our common stock or Warrants pursuant to the exercise of any employee stock option or otherwise as compensation;
- persons who do not hold our common stock or Warrants as a capital asset within the meaning of Section 1221 of the Code; or
- persons deemed to sell our common stock or Warrants under the constructive sale provisions of the Code.

In addition, if a partnership (or entity or arrangement classified as a partnership for U.S. federal income tax purposes) holds our common stock or Warrants, the tax treatment of a partner generally will depend on the status of the partner and upon the activities of the partnership. Accordingly, partnerships that hold our common stock or Warrants, and partners in such partnerships, should consult their tax advisors.

You are urged to consult your own tax advisors with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax consequences of the purchase, ownership and disposition of our common stock and Warrants arising under the U.S. federal estate or gift tax laws or under the laws of any state, local, non-U.S., or other taxing jurisdiction or under any applicable tax treaty.

General Treatment of Units and Allocation of Purchase Price

For U.S. federal income tax purposes, the purchase of our common stock and associated Warrant in this offering by holders should be treated for U.S. federal income tax purposes as a "Unit" consisting of one share of our common stock and its associated Warrant. Each holder must allocate its purchase price of such Unit between each share of our common stock and its associated Warrant, as applicable based on their respective relative fair market values of each at the time of issuance. This allocation of the purchase price will establish the holder's initial tax basis for U.S. federal income tax purposes for each share of our common stock and its associated Warrant.

Any disposition of a Unit should be treated for U.S. federal income tax purposes as a disposition of the share of common stock and one Warrant comprising the Unit, and the amount realized on the disposition should be allocated between the common stock and the Warrant based on their respective relative fair market values (as determined by each such Unit holder on all the relevant facts and circumstances) at the time of disposition. The separation of shares of common stock and Warrants comprising the Units should not be a taxable event for U.S. federal income tax purposes.

The foregoing treatment of the shares of common stock and Warrants and a holder's purchase price allocation are not binding on the IRS or the courts. Because there are no authorities that directly address instruments that are similar to the Units, no assurance can be given that the IRS or the courts will agree with the characterization described above or the discussion below. Accordingly, each prospective investor is urged to consult its own tax advisors regarding the tax consequences of an investment in a Unit (including alternative characterizations of such Unit). The balance of this discussion assumes that the characterization of the Units described above is respected for U.S. federal income tax purposes.

Consequences to U.S. Holders

The following is a summary of the U.S. federal income tax consequences that will apply to a U.S. holder of our common stock or Warrants. For purposes of this discussion, you are a U.S. holder if, for U.S. federal income tax purposes, you are a beneficial owner of our common stock or Warrants, other than a partnership, that is:

- an individual citizen or resident of the United States;
- a corporation or other entity taxable as a corporation created or organized in the United States or under the laws of the United States, any State thereof or the District of Columbia;
- an estate whose income is subject to U.S. federal income tax regardless of its source; or
- a trust (x) whose administration is subject to the primary supervision of a U.S. court and which has one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code) who have the authority to control all substantial decisions of the trust or (y) which has made a valid election to be treated as a "United States person."

Distributions

As described in the section titled "Dividend Policy," we have not declared or paid cash dividends on our common stock and do not anticipate paying any dividends on our common stock in the foreseeable future. However, if we do make distributions on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, the excess will constitute a return of capital and will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of stock as described below under "—Sale, Exchange or Other Taxable Disposition of Common Stock."

Dividend income may be taxed to an individual U.S. holder at rates applicable to long-term capital gains, provided that a minimum holding period and other limitations and requirements are satisfied. Any dividends that we pay to a U.S. holder that is a taxable corporation generally will qualify for a dividends received deduction allowed to U.S. corporations in respect of dividends received from other U.S. corporations equal to a portion of any dividends received, subject to generally applicable limitations on that deduction. U.S. holders should consult their own tax advisors regarding the holding period and other requirements that must be satisfied in order to qualify for the reduced tax rate on dividends or the dividends-received deduction.

Constructive Distributions

The terms of the Warrants may allow for changes in the exercise price of the Warrants under certain circumstances. A change in exercise price of a Warrant that allows holders to receive more shares of common stock on exercise may increase a holder's proportionate interest in our earnings and profits or assets. In that case, such holder may be treated as though it received a taxable distribution in the form of our common stock. A taxable constructive stock distribution would generally result, for example, if the exercise price is adjusted to compensate holders for distributions of cash or property to our stockholders.

Not all changes in the exercise price that result in a holder's receiving more common stock on exercise, however, would be considered as increasing a holder's proportionate interest in our earnings and profits or assets. For instance, a change in exercise price could simply prevent the dilution of a holder's interest upon a stock split or other change in capital structure. Changes of this type, if made pursuant to a bona fide reasonable adjustment formula, are not treated as constructive stock distributions for these purposes. Conversely, if an event occurs that dilutes a holder's interest and the exercise price is not adjusted, the resulting increase in the proportionate interests of our stockholders could be treated as a taxable stock distribution to our stockholders.

Any taxable constructive stock distributions resulting from a change to, or a failure to change, the exercise price of the Warrants that is treated as a distribution of common stock would be treated for U.S. federal income tax purposes in the same manner as distributions on our common stock paid in cash or other property, resulting in a taxable dividend to the recipient to the extent of our current or accumulated earnings and profits (with the recipient's tax basis in its common stock or Warrants, as applicable, being increased by the amount of such dividend), and with any excess treated as a return of capital or as capital gain. U.S. holders should consult their own tax advisors regarding whether any taxable constructive stock dividend would be eligible for tax rates applicable to long-term capital gains or the dividends-received deduction described under "—Distributions," as the requisite applicable holding period requirements might not be considered to be satisfied.

Sale, Exchange, or Other Taxable Disposition of Common Stock

A U.S. holder will generally recognize capital gain or loss on the sale, exchange, or other taxable disposition of our common stock. The amount of gain or loss will equal the difference between the amount realized on the sale and such U.S. holder's tax basis in such common stock. The amount realized will include the amount of any cash and the fair market value of any other property received in exchange for such common stock. Gain or loss will be long-term capital gain or loss if the U.S. holder has held the common stock for more than one year. Long-term capital gains of non-corporate U.S. holders are generally taxed at preferential rates. The deductibility of capital losses is subject to certain limitations.

Sale, Exchange, Redemption, Expiration, or Other Taxable Disposition of a Warrant

Upon a sale, exchange, redemption, expiration, or other taxable disposition of a Warrant, a U.S. holder generally will recognize capital gain or loss in an amount equal to the difference between the amount realized (if any) on the disposition and such U.S. holder's tax basis in the Warrant. The amount realized will include the amount of any cash and the fair market value of any other property received in exchange for the Warrant. The U.S. holder's tax basis in the Warrant generally will equal the amount the holder paid for the Warrant. Gain or loss will be long-term capital gain or loss if the U.S. holder has held the Warrant for more than one year. Long-term capital gains of non-corporate U.S. holders are generally taxed at preferential rates. The deductibility of capital losses is subject to certain limitations.

Exercise of a Warrant

Except as discussed below with respect to the cashless exercise of a Warrant, a U.S. holder generally will not recognize taxable gain or loss on the acquisition of common stock upon exercise of a Warrant for cash. The U.S. holder's tax basis in the share of our common stock received upon exercise of the Warrant generally will be an amount equal to the sum of the U.S. holder's initial investment in the Warrant (i.e., the portion of the U.S. holder's purchase price for Units that is allocated to the Warrant, as described above under "— General Treatment of Units and Allocation of Purchase Price") and the exercise price. It is unclear whether the U.S. holder's holding period for the common stock received upon exercise of the Warrants will begin on the date following the date of exercise or on the date of exercise of the Warrants; in either case, the holding period will not include the period during which the U.S. holder held the Warrants.

The U.S. federal income tax consequences of a cashless exercise of a Warrant are not clear. A cashless exercise may be tax-free, either because the exercise is not a realization event or because the exercise is treated as a recapitalization for U.S. federal income tax purposes. In either tax-free situation, a U.S. holder's basis in the common stock received would equal the holder's basis in the Warrants exercised therefor. If the cashless exercise were treated as not being a realization event, it is unclear whether a U.S. holder's holding period in the common stock would be treated as commencing on the date following the date of exercise or on the date of exercise of the Warrant; in either case, the holding period would not include the period during which the U.S. holder held the Warrants. If the cashless exercise were treated as a recapitalization, the holding period of the common stock would include the holding period of the Warrants exercised therefor.

It is possible that a cashless exercise could be treated in part as a taxable exchange in which gain or loss would be recognized. In such event, a U.S. holder could be deemed to have surrendered Warrants equal to the number of shares of common stock having a value equal to the exercise price for the total number of Warrants to be exercised. The U.S. holder would recognize capital gain or loss in an amount equal to the difference between the fair market value of the common stock received in respect of the Warrants deemed surrendered and the U.S. holder's tax basis in the Warrants deemed surrendered. In this case, a U.S. holder's tax basis in the common stock received would equal the sum of the fair market value of the common stock received in respect of the Warrants deemed surrendered and the U.S. holder's tax basis in the Warrants exercised. Alternatively, it is possible that a cashless exercise could be treated as a fully taxable exchange of the Warrants for the common stock in which case the U.S. holder would generally recognize taxable gain to the extent the fair market value of the common stock exceeds the U.S. holder's basis in its Warrants exchanged therefor. It is unclear whether a U.S. holder's holding period for the common stock would commence on the date following the date of exercise or on the date of exercise of the Warrant; in either case, the holding period would not include the period during which the U.S. holder held the Warrant.

Due to the absence of authority on the U.S. federal income tax treatment of a cashless exercise, including when a U.S. holder's holding period would commence with respect to the common stock received, there can be no assurance which, if any, of the alternative tax consequences and holding periods described above would be adopted by the IRS or a court of law. Accordingly, U.S. holders should consult their tax advisors regarding the tax consequences of a cashless exercise of a Warrant.

Consequences to Non-U.S. Holders

The following is a summary of the U.S. federal income tax consequences that will apply to a non-U.S. holder of our common stock or Warrants. A "non-U.S. holder" is a beneficial owner of our common stock or Warrants (other than a partnership or an entity or arrangement treated as a partnership for U.S. federal income tax purposes) that, for U.S. federal income tax purposes, is not a U.S. holder.

Distributions

Distributions will be treated as described above under "Consequences to U.S. Holders—Distributions." Subject to the discussion below regarding effectively connected income, any dividend, including any taxable constructive stock dividend resulting from certain adjustments, or failure to make adjustments, to the exercise price of a Warrant (as described above under "Consequences to U.S. Holders—Constructive Distributions"), paid to a non-U.S. holder generally will be subject to U.S. withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. In order to receive a reduced treaty rate, a non-U.S. holder must provide us with an IRS Form W-8BEN, IRS Form W-8BEN-E or other applicable IRS Form W-8 properly certifying qualification for the reduced rate. These forms must be updated periodically. A non-U.S. holder eligible for a reduced rate of U.S. withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. If a non-U.S. holder holds our common stock or Warrants through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then may be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Dividends received by a non-U.S. holder that are effectively connected with its conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States) are generally exempt from such withholding tax if the non-U.S. holder satisfies certain certification and disclosure requirements. In order to obtain this exemption, the non-U.S. holder must provide us with an IRS Form W-8ECI or other applicable IRS Form W-8 properly certifying such exemption. Such effectively connected dividends, although not subject to withholding tax, are taxed at the same graduated U.S. federal income tax rates applicable to U.S. holders, net of certain deductions and credits. In addition, dividends received by a corporate non-U.S. holder that are effectively connected with its conduct of a U.S. trade or business may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty. Non-U.S. holders should consult their own tax advisors regarding any applicable tax treaties that may provide for different rules.

Constructive Distributions

Constructive distributions will be treated as described above under "Consequences to U.S. Holders—Constructive Distributions."

Gain on Sale, Exchange, or Other Taxable Disposition of Common Stock or Warrants

Subject to the discussion below regarding backup withholding and foreign accounts, a non-U.S. holder generally will not be required to pay U.S. federal income tax on any gain realized upon the sale, exchange, or other taxable disposition of our common stock or a Warrant unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, the gain is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States);

- the non-U.S. holder is a non-resident alien individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met; or

- shares of our common stock or our Warrants, as applicable, constitute U.S. real property interests by reason of our status as a "United States real property holding corporation" (a "USRPHC") for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the non-U.S. holder's disposition of, or the non-U.S. holder's holding period for, our common stock or Warrants, as applicable.

We believe that we are not currently and will not become a USRPHC for U.S. federal income tax purposes, and the remainder of this discussion so assumes. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property relative to the fair market value of our other business assets, there can be no assurance that we will not become a USRPHC in the future. Even if we become a USRPHC, however, if our common stock becomes regularly traded on an established securities market (as defined by applicable Treasury regulations), such common stock will be treated as U.S. real property interests only if the non-U.S. holder actually or constructively held more than five percent of such regularly traded common stock at any time during the shorter of the five-year period preceding the non-U.S. holder's disposition of, or the non-U.S. holder's holding period for, our common stock. In addition, provided that our common stock is regularly traded on an established securities market (as defined by applicable Treasury regulations), a Warrant will not be treated as a U.S. real property interest with respect to a non-U.S. holder if such holder did not own, actually or constructively, Warrants whose total fair market value on the date they were acquired (and on the date or dates any additional Warrants were acquired) exceeded the fair market value on that date (and on the date or dates any additional Warrants were acquired) of five percent of all our common stock.

If the non-U.S. holder is described in the first bullet above, it will be required to pay tax on the net gain derived from the sale, exchange, or other taxable disposition under regular graduated U.S. federal income tax rates, and a corporate non-U.S. holder described in the first bullet above also may be subject to the branch profits tax at a rate of 30%, or such lower rate as may be specified by an applicable income tax treaty. An individual non-U.S. holder described in the second bullet above will be required to pay a flat 30% tax (or such lower rate specified by an applicable income tax treaty) on the gain derived from the sale, exchange, or other taxable disposition, which gain may be offset by U.S. source capital losses for the year (provided the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses). Non-U.S. holders should consult their own tax advisors regarding any applicable income tax or other treaties that may provide for different rules.

Exercise of a Warrant

A non-U.S. holder generally will not be subject to U.S. federal income tax on the exercise of Warrants into shares of our common stock. However, if a cashless exercise of the Warrants results in a taxable exchange, as described in "Consequences to U.S. Holders — Exercise of a Warrant," the rules described above under "—Gain on Sale, Exchange, or Other Taxable Disposition of Common Stock or Warrants" would apply. Non-U.S. holders should consult their tax advisors regarding the tax consequences of a cashless exercise.

Federal Estate Tax

Common stock or Warrants beneficially owned by an individual who is not a citizen or resident of the United States (as defined for U.S. federal estate tax purposes) at the time of their death will generally be includable in the decedent's gross estate for U.S. federal estate tax purposes. Such securities, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax treaty provides otherwise.

Backup Withholding and Information Reporting

Generally, we must report annually to the IRS the amount of dividends paid to you, your name and address and the amount of tax withheld, if any. A similar report will be sent to you. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in your country of residence if you reside outside of the United States.

Payments of dividends on or of proceeds from the disposition of our common stock or Warrants made to you may be subject to information reporting and backup withholding. Backup withholding may apply at a current rate of 24% unless you (i) provide the payor with a correct taxpayer identification number and comply with applicable certification requirements, or (ii) establish an exemption, for example, by properly certifying your non-U.S. status on an IRS Form W-8BEN or IRS Form W-8BEN-E or other applicable IRS Form W-8. Notwithstanding the foregoing, backup withholding and information reporting may apply if either we or our paying agent has actual knowledge, or reason to know, that you are a U.S. person that is not an exempt recipient.

Backup withholding is not an additional tax; rather, the U.S. federal income tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund or credit may generally be obtained from the IRS, provided that the required information is furnished to the IRS in a timely manner.

Foreign Account Tax Compliance Act

The Foreign Account Tax Compliance Act ("FATCA") generally imposes withholding tax at a rate of 30% on dividends on our common stock or Warrants paid to a "foreign financial institution" (as specially defined under these rules), unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding the U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or otherwise establishes an exemption. FATCA also generally imposes a U.S. federal withholding tax of 30% on dividends on our common stock or Warrants paid to a "non-financial foreign entity" (as specially defined for purposes of these rules) unless such entity provides the withholding agent with a certification identifying certain substantial direct and indirect U.S. owners of the entity, certifies that there are none or otherwise establishes an exemption. The withholding provisions under FATCA generally apply to dividends paid by us. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this paragraph. Non-U.S. holders should consult their own tax advisors regarding the possible implications of this legislation on their investment in our common stock or Warrants.

Each prospective investor should consult its own tax advisor regarding the particular U.S. federal, state and local and non-U.S. consequences of purchasing, owning and disposing of our common stock or Warrants, including the consequences of any proposed changes in applicable laws.

UNDERWRITING

Roth Capital Partners LLC is acting as the sole book-running manager of the offering. We will enter into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters and the underwriters have agreed to purchase from us, at the public offering price per Unit less the underwriting discounts set forth on the cover page of this prospectus, the number of Units listed next to its name in the following table:

Underwriter	Number of Units
Roth Capital Partners LLC	
Total	

The underwriting agreement provides that the obligation of the underwriters to purchase all of the Units being offered to the public is subject to specific conditions, including the absence of any material adverse change in our business or in the financial markets and the receipt of certain legal opinions, certificates and letters from us, our counsel and the independent auditors. The underwriting agreement also provides that if an underwriter defaults, the offering may be terminated. Subject to the terms of the underwriting agreement, the underwriters will purchase all of the Units being offered to the public, other than those covered by the over-allotment option described below, if any of these Units are purchased.

The underwriters are offering the Units, subject to prior sale, when, as and if issued to and accepted by it, subject to approval of legal matters by their counsel and other conditions specified in the underwriting agreement. The underwriters reserves the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Over-Allotment Option

We have granted to the Representative an option, exercisable one or more times in whole or in part, not later than 45 days after the date of this prospectus, to purchase from us up to an (i) additional ____ shares of common stock at a price of $____ per share and/or (ii) additional warrants to purchase ____ shares of common stock at a price of $____ per warrant, in each case, less the underwriting discounts and commissions set forth on the cover of this prospectus in any combination thereof to cover over-allotments, if any. To the extent that the Representative exercises this option, it will become obligated, subject to conditions, to purchase approximately the same percentage of these additional shares of common stock and/or warrants as the number of Units to be purchased by it in the above table bears to the total number of Units offered by this prospectus. We will be obligated, pursuant to the option, to sell these additional shares of common stock and/or warrants to the Representative to the extent the option is exercised. If any additional shares of common stock and/or warrants are purchased, the underwriters will offer the additional shares of common stock and/or warrants on the same terms as those on which the other Units are being offered hereunder.

Discounts and Commissions; Expenses

The following table shows the public offering price, underwriting discount and proceeds, before expenses, to us. The information assumes either no exercise or full exercise by the Representative of the over-allotment option.

	Per Unit	Total Without Over- Allotment Option	Total With Full Over- Allotment Option
Public offering price	$	$	$
Underwriting discount (7.0%)	$	$	$
Proceeds, before expenses, to us	$	$	$

The underwriters proposes to offer the Units offered by us to the public at the public offering price per Unit set forth on the cover of this prospectus. In addition, the underwriters may offer some of the Units to other securities dealers at such price less a concession of $____ per Unit. After the initial offering, the public offering price and concession to dealers may be changed.

We have agreed to reimburse the underwriters for reasonable out-of-pocket expenses related to the offering not to exceed $75,000 in the aggregate, including an advance of $25,000 paid to the Representative for its anticipated out-of-pocket expenses in connection with this offering. Any portion of the $25,000 expense advance will be returned to us to the extent that offering expenses are not actually incurred by the underwriters in accordance with Financial Industry Regulation Authority ("FINRA") Rule 5110(g)(4)(A). We estimate that total expenses payable by us in connection with this offering, other than the underwriting discount and corporate finance fee, will be approximately $[ ].

Discretionary Accounts

The underwriters do not intend to confirm sales of the Units offered hereby to any accounts over which it has discretionary authority.

Indemnification

We have agreed to indemnify the underwriters against specified liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriters may be required to make in respect thereof.

Lock-Up Agreements

We and our directors, officers and certain shareholders have agreed with the underwriter, for a period of six months after the closing of this offering, not to offer for sale, issue, sell, contract to sell, pledge grant any option to purchase, make any short sale or otherwise dispose of, directly or indirectly any shares of our common stock or any securities convertible into or exchangeable for our common stock either owned as of the date of the underwriting agreement or thereafter acquired without the prior written consent of the underwriters, subject to certain exceptions. Holders of a total of [ ] shares of our issued and outstanding common stock are subject to such lockup. The Representative may, in its sole discretion and at any time or from time to time before the termination of the lock-up period, without notice, release all or any portion of the securities subject to lock-up agreements.

Pricing of this Offering

Prior to this offering, there has been no public market for our Warrants. The public offering price for our Units was determined through negotiations between us and the underwriters. Among the factors considered in these negotiations were prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the public offering price of our Units will correspond to the price at which our common stock will trade in the public market subsequent to this offering or that an active trading market for our common stock will develop and continue after this offering.

Price Stabilization, Short Positions and Penalty Bids

In connection with this offering the underwriters may engage in stabilizing transactions, over-allotment transactions, syndicate covering transactions and penalty bids in accordance with Regulation M under the Exchange Act:

- Stabilizing transactions permit bids to purchase securities so long as the stabilizing bids do not exceed a specified maximum.

- Over-allotment involves sales by the underwriters of securities in excess of the number of securities the underwriters are obligated to purchase, which creates a syndicate short position. The short position may be either a covered short position or a naked short position. In a covered short position, the number of securities over-allotted by the underwriters is not greater than the number of securities that they may purchase in the over-allotment option. In a naked short position, the number of securities involved is greater than the number of securities in the over-allotment option. The underwriters may close out any covered short position by either exercising its over-allotment option and/or purchasing securities in the open market.

- Syndicate covering transactions involve purchases of the securities in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of securities to close out the short position, the underwriters will consider, among other things, the price of securities available for purchase in the open market as compared to the price at which they may purchase securities through the over-allotment option. A naked short position occurs if the underwriters sells more securities than could be covered by the over-allotment option. This position can only be closed out by buying securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in this offering.

- Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when securities originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our securities or preventing or retarding a decline in the market price of the securities. As a result, the price of our shares of common stock and warrants may be higher than the price that might otherwise exist in the open market. These transactions may be discontinued at any time.

Neither we nor the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our shares of common stock and warrants. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transaction, if commenced, will not be discontinued without notice.

Electronic Distribution

This prospectus in electronic format may be made available on websites or through other online services maintained by the underwriters, or by their affiliates. Other than this prospectus in electronic format, the information on the underwriters' website and any information contained in any other websites maintained by the underwriters is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the underwriters in their capacity as underwriter, and should not be relied upon by investors.

Offers Outside the United States

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Other Relationships

The representative and its affiliates may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. The representative may in the future receive customary fees and commissions for these transactions.

Nasdaq Listing

Our common stock is quoted on the OTCQB market tier of the OTC Markets under the symbol "LADX". We intend to apply to list our common stock and the Warrants on Nasdaq under the symbols "LADX" and "LADX-W", respectively.

Transfer Agent and Registrar

The transfer agent for our common stock is American Stock Transfer & Trust Company, located at 6201 15th Ave, Brooklyn, New York 11219. American Stock Transfer & Trust Company will also be the warrant agent in connection with the warrants to be issued in this offering.

LEGAL MATTERS

Certain legal matters in connection with this offering relating to U.S. law will be passed upon for us by Haynes and Boone, LLP, New York, New York. Pryor Cashman LLP, New York, New York, is acting as counsel for the underwriter in connection with certain legal matters related to this offering.

EXPERTS

Our audited consolidated financial statements as of and for the years ended December 31, 2022 and 2021 appearing in this prospectus and registration statement have been audited by Weinberg & Company, our independent registered public accounting firm, as set forth in their report appearing elsewhere herein, including the explanatory paragraph regarding our ability to continue as a going concern, and are included in reliance upon such report given on the authority of such firm as an expert in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, including relevant exhibits and schedules, with respect to the securities to be sold in this offering. This prospectus, which constitutes a part of the registration statement, does not contain all of the information contained in the registration statement. You should read the registration statement and its exhibits for further information with respect to us and the securities to be sold in this offering. Some of these exhibits consist of documents or contracts that are described in this prospectus in summary form. You should read the entire document or contract for the complete terms. You may read and copy the registration statement and its exhibits at the SEC's Public Reference Room at 100 F Street N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an internet website at www.sec.gov, from which you can electronically access the registration statement and its exhibits.

We are a reporting company and file annual, quarterly and current reports, and other information with the SEC. We make available free of charge on or through our website at www.cytrx.com, 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 Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after we electronically file such material with or otherwise furnish it to the SEC. Information contained in, or accessible through, our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference.

INDEX TO FINANCIAL STATEMENTS[1]

LadRx Corporation	
Reports of Independent Registered Public Accounting Firm (PCAOB ID No. 572)	F- 2
Consolidated Balance Sheets	F- 3
Consolidated Statements of Operations	F- 4
Consolidated Statements of Stockholders' Equity (Deficit)	F- 5
Consolidated Statements of Cash Flows	F- 6
Notes to Consolidated Financial Statements	F- 7

Report of Independent Registered Public Accounting Firm

Board of Directors and Stockholders
LadRx Corporation
Los Angeles, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of LadRx Corporation (the "Company") and subsidiary as of December 31, 2022 and 2021, the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for the years then ended, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company and its subsidiary as of December 31, 2022 and 2021, 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.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has no recurring source of revenue, has incurred recurring operating losses and negative operating cash flows since inception and has an accumulated deficit at December 31, 2022. These matters raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1 to the consolidated financial statements. These consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

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

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

Critical Audit Matter

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

We have served as the Company's auditor since 2019.

/s/ Weinberg & Company

Los Angeles, California

March 23, 2023

LADRX CORPORATION
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,374,992	$ 6,769,603
Insurance claim receivable	—	200,000
Prepaid expenses and other current assets	628,745	1,310,382
Total current assets	2,003,737	8,279,985
Equipment and furnishings, net	18,546	32,784
Other assets	7,703	16,836
Operating lease right-of-use assets	216,786	397,172
Total assets	$ 2,246,772	$ 8,726,777
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable	$ 975,944	$ 1,470,652
Accrued expenses and other current liabilities	1,015,501	2,064,506
Current portion of operating lease obligations	196,081	198,819
Total current liabilities	2,187,526	3,733,977
Operating lease liabilities, net of current portion	33,526	216,381
Total liabilities	2,221,052	3,950,358
Preferred Stock, Series C 10% Convertible, $1,000 par value, 2,752 and 8,240 shares issued and outstanding at December 31, 2022 and 2021, respectively	1,343,684	4,022,700
Commitments and contingencies		
Stockholders' equity (deficit):		
Preferred Stock, $0.01 par value, 833,333 shares authorized, including 50,000 shares of Series B Junior Participating Preferred Stock; no shares issued and outstanding at December 31, 2022 and 2021, respectively	—	—
Common stock, $0.001 par value, 62,393,940 shares authorized; 45,037,391 and 38,780,038 shares issued and outstanding at December 31, 2022 and 2021, respectively	45,037	38,780
Additional paid-in capital	487,474,664	484,790,650
Accumulated deficit	(488,837,665)	(484,075,711)
Total stockholders' equity (deficit)	(1,317,964)	753,719
Total liabilities and stockholders' equity (deficit)	$ 2,246,772	$ 8,726,777

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

LADRX CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,	
	2022	**2021**
Revenue:		
Licensing revenue	$ —	$ —
Expenses:		
General and administrative	4,545,884	5,966,415
Settlement with former Chief Executive Officer	—	6,096,597
Depreciation and amortization	15,004	13,978
	4,560,888	12,076,990
Loss from operations	(4,560,888)	(12,076,990)
Other income (expense):		
Liquidated damages expense	—	(1,109,653)
Forgiveness of accounts payable	351,241	—
Interest income	11,689	16,822
Other income (expense), net	(2,615)	(6,842)
Net Loss	(4,200,573)	(13,176,663)
Dividends paid on preferred shares	(561,381)	(171,668)
Net loss attributable to common stockholders	$ (4,761,954)	(13,348,331)
Basic and diluted loss per share	$ (0.11)	$ (0.35)
Basic and diluted weighted average shares outstanding	43,359,233	37,584,695

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

LADRX CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

	Series B Preferred Shares Issued	Shares of Common Stock Issued	Preferred Stock Amount	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Total
Balance at January 1, 2021	—	36,480,038	—	$ 36,480	479,561,860	$(470,727,380)	$ 8,870,960
Issuance of common stock and preferred investment options	—	2,000,000	—	2,000	5,151,090	—	5,153,090
Exercise of stock options	—	300,000	—	300	77,700	—	78,000
Preferred dividend	—	—	—	—	—	(171,668)	(171,668)
Net loss	—	—	—		—	(13,176,663)	(13,176,663)
Balance at December 31, 2021	—	38,780,038	—	38,780	484,790,650	(484,075,711)	753,719
Issuance of common stock upon conversion of preferred shares	—	6,235,949		6,236	2,672,780	—	2,679,016
Exercise of stock options	—	21,404	—	21	(21)	—	—
Preferred dividend	—	—	—	—	—	(561,381)	(561,381)
Issuance of restricted stock from compensation and services	—	—	—	—	11,255	—	11,255
Net loss	—	—	—	—	—	(4,200,573)	(4,200,573)
Balance at December 31, 2022	—	45,037,391		$ 45,037	$487,474,664	$(488,837,665)	$ (1,317,964)

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

LADRX CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,	
	2022	2021
Cash flows from operating activities:		
Net loss from operations	$ (4,200,573)	$ (13,176,663)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	15,004	13,978
Stock-based compensation expense	11,255	—
Changes in assets and liabilities:		
Insurance receivable	200,000	125,105
Prepaid expenses and other current assets	681,637	(215,707)
Reduction of right of-use assets	180,386	183,306
Accounts payable	(494,708)	68,598
Other assets	9,133	—
Decrease in lease liabilities	(185,593)	(181,103)
Accrued expenses and other current liabilities	(1,049,005)	873,596
Net cash used in operating activities	(4,832,464)	(12,308,890)
Cash flows from investing activities:		
Purchases of equipment and furnishings	(766)	(7,004)
Net cash used in investing activities	(766)	(7,004)
Cash flows from financing activities:		
Net proceeds from Security Purchase Agreement	—	9,175,790
Preferred stock dividend	(561,381)	(171,668)
Proceeds from the exercise of stock options	—	78,000
Net cash (used in) provided by financing activities	(561,381)	9,082,122
Net decrease in cash and cash equivalents	(5,394,611)	(3,233,772)
Cash and cash equivalents at beginning of year	6,769,603	10,003,375
Cash and cash equivalents at end of year	$ 1,374,992	$ 6,769,603
Supplemental disclosures of Cash Flow Information:		
Insurance claims to offset accounts payable	$ —	$ 200,000

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

1. Nature of Business

LadRx Corporation ("LadRx" or the Company) is a biopharmaceutical research and development company specializing in oncology. The Company's focus is on the discovery, research and clinical development of novel anti-cancer drug candidates that employ novel technologies that target chemotherapeutic drugs to solid tumors and reduce off-target toxicities. However, the Company's research and development activities have been curtailed as they seek additional financing. During 2017, the Company's discovery laboratory in Freiburg, Germany synthesized and tested over 75 rationally designed drug candidates with highly potent anti-cancer payloads, culminating in the creation of two distinct classes of compounds. Four lead candidates (LADR-7 through LADR-10) were selected based on *in vitro* and animal studies in several different cancer models, and based on stability and manufacturing feasibility. In addition, a novel companion diagnostic, ACDx™, was developed to identify patients with cancer who are most likely to benefit from treatment with these drug candidates.

On June 1, 2018, the Company launched Centurion BioPharma Corporation ("Centurion"), a private subsidiary, and transferred all of its assets, liabilities and personnel associated with the laboratory operations in Freiburg, Germany. In connection with said transfer, the Company and Centurion entered into a Management Services Agreement whereby the Company agreed to render advisory, consulting, financial and administrative services to Centurion, for which Centurion shall reimburse the Company for the cost of such services plus a 5% service charge. On December 21, 2018, LadRx announced that Centurion had concluded the pre-clinical phase of development for its four LADR™ drug candidates, and for its albumin companion diagnostic (ACDx™). As a result of completing this work, operations taking place at the pre-clinical laboratory in Freiburg, Germany were no longer needed and, accordingly, the lab was closed at the end of January 2019.

On March 9, 2022, Centurion merged with and into LadRx, with LadRx absorbing all of Centurion's assets and continuing after the merger as the surviving entity (the "Merger"). The Merger was implemented through an agreement and plan of merger pursuant to Section 253 of the General Corporation Law of the State of Delaware and did not require approval from either our or Centurion's stockholders. The Certificate of Ownership merging Centurion into LadRx was filed with the Secretary of State of Delaware on March 9, 2022.

Effective September 26, 2022, the Company changed its name from CytRx Corporation to LadRx Corporation pursuant to a Certificate of Amendment to our Certificate of Incorporation filed with the Secretary of State of Delaware. In accordance with the General Corporation Law of the State of Delaware (the "DGCL"), its board of directors approved the name change and the Certificate of Amendment. Pursuant to Section 242(b)(1) of the DGCL, stockholder approval was not required for the name change or the Certificate of Amendment.

We are a Delaware corporation, incorporated in 1985. Our corporate offices are located at 11726 San Vicente Boulevard, Suite 650, Los Angeles, California 90049, and our telephone number is (310) 826-5648. Our web site is located at http://www.ladrxcorp.com. We do not incorporate by reference into this prospectus the information on, or accessible through, our website, and you should not consider it as part of this prospectus.

LADR Drug Discovery Platform and Centurion

The LADR Technology Offers the Opportunity for multiple pipeline drugs. The Company's LADR™ (Linker Activated Drug Release) technology platform consists of an organic backbone that is attached to a chemotoxic agent. The purpose of the LADR™ backbone is to first target and deliver the chemotoxic agent to the tumor environment, and then to release the chemotoxic agent within the tumor. By delivering, concentrating, and releasing the chemotoxic agent within the tumor, one expects to reduce the off-target side-effects of the chemotherapeutic, which in turn allows for several-fold higher dosing of the chemotherapeutic to the patient. Being small organic molecules, the Company expects LADR-based drugs to offer the benefits of targeting the tumor without the complexity, side effects, and expense inherent in macromolecules such as antibodies and nanoparticles.

The Company's LADR-based drugs use circulating albumin as the binding target and as the trojan horse to deliver the LADR™ drugs to the tumor. Albumin is the most abundant protein in plasma and accumulates inside tumors due to the aberrant vascular structure that exists within solid tumors. Tumors use albumin as a nutritional source and for transport of signaling and other molecules that are important to the maintenance and growth of the tumor, which makes albumin an excellent target for drugs that are intended for solid tumors.

The Company's LADR™ development efforts are focused on two classes of ultra-high potency albumin-binding drugs. These LADR-based drugs, LADR7, 8, 9, and 10, combine the proprietary LADR™ backbone with novel derivatives of the auristatin and maytansinoid drug classes. Auristatin and maytansinoid are highly potent chemotoxins, and require targeting to the tumor for safe administration to humans, as is the case for the FDA-approved drugs Adcetris (auristatin antibody-drug-conjugate by Seagen) and Kadcyla (maytansine antibody-drug-conjugate by Genentech). We believe that LADR-based drugs offer the benefits of tumor targeting without the disadvantages of antibodies and other macromolecules, which include expense, complexity, and negative side effects. Additionally, albumin is a very well-characterized drug target, which we believe will reduce clinical and regulatory costs and risks.

The Company's postulated mechanism of action for LADR-based drugs is as follows:

- after administration, the linker portion of the drug conjugate forms a rapid and specific covalent bond to the cysteine-34 position of circulating albumin;
- circulating albumin preferentially accumulates in tumors due to a mechanism called "Enhanced Permeability and Retention", which results in lower exposure to the drug in noncancerous tissues of the heart, liver, and other organs;
- once localized at the tumor, the acid-sensitive linker of the LADR™ backbone is cleaved due to the specific conditions within the tumor and in the tumor microenvironment; and
- free active drug is then released within the tumor, causing tumor cell death.

The first-generation LADR-based drug is called aldoxorubicin. Aldoxorubicin is the drug doxorubicin attached to the first generation LADR™ backbone (LADRs 7-10 employ a next generation LADR™ backbone). Aldoxorubicin has been administered to over 600 human subjects in human clinical trials and has proven the concept of LADR™ in that several-fold more doxorubicin can be safely administered to patients when the doxorubicin is attached to LADR™ than when administered as native doxorubicin. Aldoxorubicin has been licensed to ImmunityBio, and is currently in a Phase II registrational intent trial for pancreatic cancer. Aldoxorubicin is expected to enter a Phase I/II trial for glioblastoma in 2022 or 2023.

The next generation LADR™ drugs are termed LADR7, 8, 9, and 10. A great deal of Investigational New Drug ("IND") enabling work has already been accomplished on LADR7-10, including in-silico modeling, in-vitro efficacy testing in several different cancer models, in-vivo dosing, safety, and efficacy testing in several different cancer models in animals. We have also developed and proven manufacturability, an important step prior to beginning human clinical trials.

The IND-enabling work that remains prior to applying to the FDA for first-in-human studies for LADR7-10 is limited due to the extensive experimentation already completed. For example, in the case of LADR7, a manufacturing run under Good Manufacturing Practices (GMP) must be completed and some toxicology studies completed using the GMP material must be completed in animals. Toxicology studies with LADR7 have already been completed with non-GMP manufactured drug. Management estimates that these final IND-enabling activities for LADR7 would take approximately 12 months to complete, once funded and initiated, and that first-in-human dosing would be achieved within approximately 6-9 months after completion of the IND-enabling studies. Management further estimates that the cost to manufacture GMP material for one LADR™ drug, for example LADR7, complete all pre-IND studies, and to obtain an IND could be approximately $2M in direct costs, based on current estimates, representing a capital-efficient path to clinical entry.

Because the LADR™ backbone in future products would be the same as the LADR™ backbone in current product candidates, (i.e. the chemotoxin can be changed without changing the LADR™ backbone), management anticipates that future product candidates beyond LADR7-10 may enjoy abbreviated pre-clinical pathways to first-in-human. Such abbreviated pathways would be subject to FDA review and agreement.

The Company's novel companion diagnostic, ACDx™ (albumin companion diagnostic) was developed to identify patients with cancer who are most likely to benefit from treatment with the four LADR™ lead assets. We have not yet determined whether the use of a companion diagnostic will be necessary or helpful, and plan to continue to investigate this question in parallel to the pre-clinical and clinical development of LADRs 7-10.

The LADR™ backbone and drugs that employ LADR™ are protected by domestic and international patents, and additional patents are pending.

Business Strategy for LADR™ Platform

Throughout 2022, with the assistance of oncology drug development experts, the Company has inventoried the IND-enabling data for LADRs 7-10, developed a strategy to complete the IND-enabling studies necessary for at least one LADR™ drug, and worked with vendors on establishing approximate time lines and costs to reach first-in-human dosing, inclusive of manufacturing, and completion of pre-IND studies and FDA filings, With this important groundwork completed, we believe that management is well situated to rapidly advance our next-generation LADR™ assets as soon as funding or partnering is achieved, and is working diligently to obtain funding and/or partnering of the LADR™ assets. Management will continue to explore in parallel both partnered and non-partnered funding and development strategies for LADR™ with a goal of obtaining the least costly capital possible to enable value inflection milestones.

Partnering of Aldoxorubicin

On July 27, 2017, the Company entered into an exclusive worldwide license with ImmunityBio, Inc. (formerly known as NantCell, Inc. ("ImmunityBio")), granting to ImmunityBio the exclusive rights to develop, manufacture and commercialize aldoxorubicin in all indications, and the Company is no longer directly working on the development of aldoxorubicin. As part of the license agreement, ImmunityBio made a strategic investment of $13 million in LadRx common stock at $6.60 per share (adjusted to reflect our 2017 reverse stock split), a premium of 92% to the market price on that date. In connection therewith, the Company also issued ImmunityBio a warrant to purchase up to 500,000 shares of common stock at $6.60, which expired on January 26, 2019. The Company is entitled to receive up to an aggregate of $343 million in potential milestone payments, contingent upon achievement of certain regulatory approvals and commercial milestones. The Company is also entitled to receive ascending double-digit royalties for net sales for soft tissue sarcomas and mid to high single digit royalties for other indications. There can be no assurance that ImmunityBio will achieve such milestones, approvals or sales with respect to aldoxorubicin.

ImmunityBio is conducting an open-label, randomized, Phase 2 study of a combination of immunotherapy, aldoxorubicin and standard-of-care chemotherapy versus standard-of-care chemotherapy alone for the treatment of locally advanced or metastatic pancreatic cancer in patients who have had 1 or 2 lines of treatment (Cohorts A and B) or 3 or greater lines of treatment (Cohort C).

In January 2023, ImmunityBio announced positive results in its non-randomized fully-enrolled metastatic pancreatic cancer study in third-line or greater subjects (QUILT 88) showing that the overall survival rate for patients continues to be double compared to historical survival rates after two or more prior lines of therapy. The results were presented at the American Society of Clinical Oncology Gastrointestinal (ASCO GI) conference in San Francisco January 19-21, 2023. The median OS in this highly advanced group of patients, up to seven lines (N=83) of treatment, was 5.8 months (95% CI: 4.9, 6.4 months), exceeding the approximately 2- to 3-month historical median OS. In the third-line setting (N=41), the median OS in this group was 6.3 months (95% CI: 5.0, 7.2 months), more than doubling the historical OS. The baseline median CA 19-9 level (a marker of metastatic pancreatic disease) of the enrolled subjects (N=83) was very high at 4120 IU/ml, a significant increase from normal levels of 40 IU/ml. In subjects with CA 19-9 levels less than 4120 IU/ml (N=40), the median OS was 6.9 months (95% CI: 5.7,10.9).

In December 2022, Immunity Bio held a Type B meeting with the FDA to discuss the path for approval of this combination therapy for pancreatic cancer. The FDA advised ImmunityBio to conduct a randomized trial. This Phase 2, randomized, three-cohort, open-label study plans to evaluate the comparative efficacy and overall safety of standard-of-care chemotherapy versus low-dose chemotherapy in combination with PD-L1 t-haNK, Anktiva (N-803), and aldoxorubicin in subjects with locally advanced or metastatic pancreatic cancer (NCT04390399). Each treatment setting, as well as each first- and second-line or later maintenance treatment, will be evaluated independently as Cohorts A, B, and C, respectively, with Cohorts A and B having independent experimental and control arms. The primary objective of Cohorts A and B is progression-free survival (PFS) per RECIST V1.1, and the objective of Cohort C is overall survival (OS). Secondary objectives include initial safety and additional efficacy measures, including overall response rate (ORR), complete response (CR) rate, durability of response (DoR), disease control rate (DCR), and overall survival (OS)

Aldoxorubicin has received Orphan Drug Designation (ODD) by the U.S. Food and Drug Administration ("FDA") for the treatment of soft tissue sarcoma ("STS"). ODD provides several benefits including seven years of market exclusivity after approval, certain R&D related tax credits, and protocol assistance by the FDA. European regulators granted aldoxorubicin Orphan designation for STS which confers ten years of market exclusivity among other benefits.

ImmunityBio also lists ongoing clinical studies in glioblastoma; it is currently reviewing its options in STS.

Molecular Chaperone Assets (Orphayzme)

In 2011, LadRx sold the rights to arimoclomol and iroxanadine, based on molecular chaperone regulation technology, to Orphazyme A/S ("Orphazyme", formerly Orphazyme ApS) in exchange for a one-time, upfront payment and the right to receive up to a total of $120 million in milestone payments upon the achievement of certain pre-specified regulatory and business milestones, as well as royalty payments based on a specified percentage of any net sales of products derived from arimoclomol (the "2011 Arimoclomol Agreement"). Orphazyme transferred its rights and obligations under the 2011 Arimoclomol Agreement to KemPharm Denmark A/S ("KemPharm"), a wholly owned subsidiary of KemPharm Inc., in May 2022.

In May 2021, Orphazyme announced that the pivotal phase 3 clinical trial for arimoclomol in Amyotrophic Lateral Sclerosis did not meet its primary and secondary endpoints, reducing the maximum amount that LadRx currently has the right to receive under the 2011 Arimoclomol Agreement to approximately $100 million. Orphazyme also tested arimoclomol in Niemann-Pick disease Type C ("NPC") and Gaucher disease, and following a Phase II/III trial submitted to the FDA a New Drug Application for the treatment of NPC with arimoclomol. On June 18, 2021, Orphazyme announced it had received a complete response letter (the "Complete Response Letter") from the FDA indicating the need for additional data. In late October 2021, Orphazyme announced it held a Type A meeting with the FDA, at which the FDA recommended that Orphazyme submit additional data, information and analyses to address certain topics in the Complete Response Letter and engage in further interactions with the FDA to identify a pathway to resubmission. The FDA concurred with Orphazyme's proposal to remove the cognition domain from the NPC Clinical Severity Scale ("NPCCSS") endpoint, with the result that the primary endpoint is permitted to be recalculated using the 4- domain NPCCSS, subject to the submission of additional requested information which Orphazyme had publicly indicated that it intended to provide. To bolster the confirmatory evidence already submitted, the FDA affirmed that it would require additional in vivo or pharmacodynamic (PD)/pharmacokinetic (PK) data. Orphazyme planned to request a Type C Meeting with the FDA in the second quarter of 2022. Subject to discussions with the regulatory body, Orphazyme had publicly indicated that it planned to resubmit the NDA for arimoclomol in the second half of 2022.

Orphazyme had also submitted a Marketing Authorization Application ("MAA") with the European Medicines Agency (the "EMA"). In February 2022, Orphazyme announced that although they had received positive feedback from the Committee for Medicinal Products for Human Use ("CHMP") of the EMA, they were notified by the CHMP of a negative trend vote on the MAA for arimoclomol for NPC following an oral explanation. In March 2022 Orphazyme removed its application with the EMA. Orphazyme has publicly indicated that it will assess its strategic options and provide an update to the market at the applicable time.

On May 31, 2022, Orphazyme announced that it had completed the sale of substantially all of its assets and business activities for cash consideration of $12.8 million and assumption of liabilities estimated to equal approximately $5.2 million to KemPharm, a specialty biopharmaceutical company focused on the discovery and development of novel treatments for rare central nervous system ("CNS") diseases. As part of the KemPharm Transaction, all of Orphazyme's obligations to LadRx under the 2011 Arimoclomol Agreement, including with regard to milestone payments and royalties on sales, were assumed by KemPharm. KemPharm is expected to continue the early access programs with arimoclomol, and to continue to pursue the potential approval of arimoclomol as a treatment option for NPC. KemPharm indicated it plans on resubmitting the NDA for arimoclomol in the first quarter of 2023. In February, 2023, KemPharm published positive data based on the recent completion of their four-year open-label safety trial that indicated arimoclomol may reduce the long-term progression of NPC. They plan on including these data as part of the updated NDA resubmission. It is also identifying a regulatory path forward with the EMA. KemPharm has recently re-branded to Zevra Therapeutics, Inc.

Going Concern

The Company's consolidated financial statements have been presented on the basis that it will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. During the year ended December 31, 2022, the Company incurred a net loss of $4.2 million, utilized cash in operations of $4.8 million, and the Company had an accumulated deficit of $488.8 million as of December 31, 2022. In addition, the Company has no recurring revenue. As a result, management has concluded that there is substantial doubt about the Company's ability to continue as a going concern. The Company's consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

In order to fund our business and operations, we have relied primarily upon sales of our equity securities, including proceeds from the exercise of stock options and common stock purchase warrants and long-term loan financing. We also have received limited funding from our strategic partners and licensees. We will ultimately be required to obtain additional funding in order to execute our long-term business plans, although we do not currently have commitments from any third parties to provide us with long term debt or capital. We cannot assure that additional funding will be available on favorable terms, or at all. If we fail to obtain additional funding when needed, we may not be able to execute our business plans and our business may suffer, which would have a material adverse effect on our financial position, results of operations and cash flows. We have approximately $1.2 million of contractual obligations in 2023 and expect to pay these out of the Company's balance sheet cash. We have a total of approximately $1.9 million of material contractual obligations beyond 2023.

If ImmunityBio obtains marketing approval and successfully commercializes aldoxorubicin, we anticipate it will take two years, and possibly longer, for us to generate significant recurring revenue, and we will be dependent on future financing until such time, if ever, as we can generate significant recurring revenue. There are also no certainties that KemPharm will be successful in obtaining FDA and EMA approval for arimoclomol or choose to commercialize arimoclomol. We have no commitments from third parties to provide us with any additional financing, and we may not be able to obtain future financing on favorable terms, or at all. Failure to obtain adequate financing would adversely affect our ability to operate as a going concern. If we raise additional funds by issuing equity securities, dilution to stockholders may result and new investors could have rights superior to some or all of our existing equity holders. In addition, debt financing, if available, may include restrictive covenants. If adequate funds are not available to us, we may have to liquidate some or all of our assets or to delay or reduce the scope of or eliminate some portion or all of our development programs or clinical trials.

Current Business Strategy

Currently, the Company is working on identifying partnership or financing opportunities for LADR™ ultra-high potency drug conjugates and their albumin companion diagnostic. We have concluded all research and development on LADR and its companion diagnostic and continue to focus on identifying these partnership or financing opportunities.

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation — The accompanying Consolidated Financial Statements are prepared pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC") and accounting principles generally accepted in the United States ("GAAP"). The Consolidated Financial Statements include the accounts of LadRx Corporation and its wholly-owned subsidiary. All intercompany accounts are eliminated.

Revenue Recognition — Revenue consists of license fees from strategic alliances with pharmaceutical companies. During the years ended December 31, 2022 and 2021, no revenue was earned from license fees.

Cash Equivalents — The Company considers all highly liquid debt instruments with an original maturity of 90 days or less to be cash equivalents. Cash equivalents consist primarily of amounts invested in certificates of deposit and money market accounts.

Equipment and Furnishings — Equipment and furnishings are stated at cost and depreciated using the straight-line method based on the estimated useful lives (generally three to five years for equipment and furniture) of the related assets. Whenever there is a triggering event that might suggest impairment, management evaluates the realizability of recorded long-lived assets to determine whether their carrying values have been impaired. The Company records impairment losses on long-lived assets used in operations when events and circumstances indicate that the assets might be impaired and the non-discounted cash flows estimated to be generated by those assets are less than the carrying amount of those assets. Any impairment loss is measured by comparing the fair value of the asset to its carrying amount.

Insurance recoveries — The Company has several policies with insurance underwriters that provide for the recovery of certain costs incurred by the Company. The Company's policy is to record any liability as incurred, and then to record the estimated recovery from the insurance company for that cost as a receivable in accordance with terms of its existing policies. As of December 31, 2021, there were $200,000 of insurance recoveries that were collected in 2022. As of December 31, 2022, there were no amounts recoverable from its insurance company carriers under the terms of its policies.

Fair Value Measurements — Assets and liabilities recorded at fair value on the consolidated balance sheets are categorized based upon the level of judgment associated with the inputs used to measure the fair value. Level inputs are as follows:

Level 1 – quoted prices in active markets for identical assets or liabilities.

Level 2 – other significant observable inputs for the assets or liabilities through corroboration with market data at the measurement date.

Level 3 – significant unobservable inputs that reflect management's best estimate of what market participants would use to price the assets or liabilities at the measurement date.

The Company considers carrying amounts of accounts receivable, accounts payable and accrued expenses to approximate fair value due to the short-term nature of these financial instruments.

Patents and Patent Application Costs — Although the Company believes that its patents and underlying technology have continuing value, the amount of future benefits to be derived from the patents is uncertain. Patent costs are therefore expensed as incurred.

Net Income (Loss) Per Share of Common Stock — Basic net income (loss) per share is computed by dividing net income (loss) by the weighted average number of shares of common stock outstanding for the period. Diluted earnings per share is computed by dividing the net income applicable to common stockholders by the weighted average number of shares of common stock outstanding plus the number of additional shares of common stock that would have been outstanding if all dilutive potential shares of common stock had been issued using the treasury stock method. Potential shares of common stock are excluded from the computation when their effect is antidilutive. The dilutive effect of potentially dilutive securities is reflected in diluted net income per share if the exercise prices were lower than the average fair market value of common stock during the reporting period.

	As of December 31,	
	2022	2021
Options to acquire common stock	1,765,108	2,827,820
Warrants to acquire common stock	4,167	4,167
Convertible preferred stock	3,127,689	9,363,637
Preferred investment option	11,363,637	11,363,637
	16,260,601	23,559,261

Potentially dilutive stock options, warrants and securities from the table above were excluded from the computation of diluted net income (loss) per share, because the effect would be anti-dilutive.

Stock-based Compensation — The Company accounts for share-based awards to employees and nonemployees directors and consultants in accordance with the provisions of ASC 718, *Compensation—Stock Compensation.*, and under the recently issued guidance following FASB's pronouncement, ASU 2018-07, *Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. Under ASC 718, and applicable updates adopted, share-based awards are valued at fair value on the date of grant and that fair value is recognized over the requisite service, or vesting, period. The Company values its equity awards using the Black-Scholes option pricing model, and accounts for forfeitures when they occur.

Research and Development Expenses — Research and development expenses consist of costs incurred for direct and overhead-related research expenses and are expensed as incurred. Costs to acquire technologies, including licenses and drugs, that are utilized in research and development and that have no alternative future use are expensed when incurred. Technology developed for use in its products is expensed as incurred until technological feasibility has been established.

Income Taxes — The Company accounts for income taxes in accordance with the provisions of FASB ASC 740-10, *Income Taxes, ("ASC 740"*) which requires the recognition of deferred tax assets and liabilities for taxable temporary differences and deferred tax assets for deductible temporary differences and operating loss carry-forwards using enacted tax rates in effect in the years the differences are expected to reverse. Deferred income tax benefit or expense is recognized as a result of changes in net deferred tax assets or deferred tax liabilities. A valuation allowance is recorded when it is more likely than not that some or all of any deferred tax assets will not be realized.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained upon examination by the taxing authorities based on the technical merits of the position. The Company's policy is to recognize any interest and penalties related to unrecognized tax benefits as a component of income tax expenses.

Concentrations of Risks — Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash, cash equivalents and short-term investments. The Company maintains cash and cash equivalents in large well-capitalized financial institutions and the Company's investment policy disallows investment in any debt securities rated less than "investment-grade" by national ratings services. The Company has not experienced any losses on its deposits of cash or cash equivalents or its short-term investments. Cash and cash equivalents are maintained at financial institutions and, at times, balances may exceed federally insured limits. The Company has never experienced any losses related to these balances.

Use of Estimates — Preparation of the Company's consolidated financial statements in conformance with U.S. GAAP requires the Company's management to make estimates and assumptions that impact the reported amounts of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities in the Company's consolidated financial statements and accompanying notes. The significant estimates in the Company's consolidated financial statements relate to the valuation of equity awards, recoverability of deferred tax assets, insurance claims and estimated useful lives of fixed assets. The Company bases estimates and assumptions on historical experience, when available, and on various factors that it believes to be reasonable under the circumstances. The Company evaluates its estimates and assumptions on an ongoing basis, and its actual results may differ from estimates made under different assumptions or conditions.

New Accounting Pronouncements — In June 2016, the FASB issued ASU No. 2016-13, Credit Losses - Measurement of Credit Losses on Financial Instruments (“ASC 326”). The standard significantly changes how entities will measure credit losses for most financial assets, including accounts and notes receivables. The standard will replace today’s “incurred loss” approach with an “expected loss” model, under which companies will recognize allowances based on expected rather than incurred losses. Entities will apply the standard’s provisions as a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The standard is effective for interim and annual reporting periods beginning after December 15, 2022. The adoption of ASU 2016-13 is not expected to have a material impact on the Company’s financial position, results of operations, and cash flows.

In May 2021, the FASB issued ASU 2021-04, Earnings Per Share (Topic 260), Debt — Modifications and Extinguishments (Subtopic 470-50), Compensation — Stock Compensation (Topic 718), and Derivatives and Hedging — Contracts in Entity’s Own Equity (Subtopic 815-40): Issuer’s Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options (“ASU 2021-04”). ASU 2021-04 provides guidance as to how an issuer should account for a modification of the terms or conditions or an exchange of a freestanding equity-classified written call option (i.e., a warrant) that remains classified after modification or exchange as an exchange of the original instrument for a new instrument. An issuer should measure the effect of a modification or exchange as the difference between the fair value of the modified or exchanged warrant and the fair value of that warrant immediately before modification or exchange and then apply a recognition model that comprises four categories of transactions and the corresponding accounting treatment for each category (equity issuance, debt origination, debt modification, and modifications unrelated to equity issuance and debt origination or modification). ASU 2021-04 is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. An entity should apply the guidance provided in ASU 2021-04 prospectively to modifications or exchanges occurring on or after the effective date. Early adoption is permitted, including adoption in an interim period. If an entity elects to early adopt ASU 2021-04 in an interim period, the guidance should be applied as of the beginning of the fiscal year that includes that interim period. The adoption of ASU 2021-04 is not expected to have any impact on the Company’s consolidated financial statement presentation or disclosures.

Other recent authoritative guidance issued by the FASB (including technical corrections to the ASC), the American Institute of Certified Public Accountants, and the Securities and Exchange Commission (“SEC”) did not, or are not expected to, have a material impact on the Company’s consolidated financial statements and related disclosures.

3. Foreign Currency Remeasurement

The U.S. dollar has been determined to be the functional currency for the net assets of the Company’s German operations. The transactions are recorded in the local currencies and are remeasured at each reporting date using the historical rates for nonmonetary assets and liabilities and current exchange rates for monetary assets and liabilities at the balance sheet date. Exchange gains and losses from the remeasurement of monetary assets and liabilities are recognized in other income (loss). The Company recognized a loss of approximately $(2,889) and $(22,440) for the years ended December 31, 2022 and 2021, respectively.

As of December 31, 2022 and 2021, the Company’s cash balances consisted of the following:

	2022	2021
U.S. Dollars	$ 1,374,992	$ 6,671,404
Euros – in US $	—	98,199
Cash Balance	$ 1,374,992	$ 6,769,603

4. Equipment and Furnishings

Equipment and furnishings at December 31, 2022 and 2021 consist of the following:

	2022	2021
Equipment and furnishings	$ 48,742	$ 59,728
Less — accumulated depreciation	(30,196)	(26,944)
Equipment and furnishings, net	$ 18,546	$ 32,784

Depreciation and amortization expense for the years ended December 31, 2022 and 2021 were $15,004 and $13,978, respectively. During the year ended December 31, 2022, fully depreciated equipment and furnishings of $11,752 were written off.

5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities at December 31, 2022 and 2021 are summarized below.

	2022	2021
Professional fees	$ 77,785	$ 208,345
Liquidated damages– see Note 7	—	615,253
Payable to former CEO	50,191	256,115
Wages, bonuses and employee benefits	152,990	261,375
Royalties and milestones	716,155	716,155
Other	18,380	7,263
Total	$ 1,015,501	$ 2,064,506

6. Leases

We lease office space and office copiers related primarily to the Company's administrative activities. The Company accounts for leases under ASC 842, *Leases,* which requires an entity to recognize a right-of-use asset and a lease liability for virtually all leases.

In January 2020, the Company signed a new four-year office lease which covers approximately 2,771 square feet of office and storage space. This lease is effective March 1, 2020 and extends through February 29, 2024, with a right to extend the term for an additional five-year period, subject to the terms and conditions set forth in the lease agreement. The monthly rent is $14,340, subject to annual increases of 3.5 percent. In February 2020, the Company renewed its additional storage space lease, which requires us to make monthly payments of $1,405, subject to a 2.5 percent annual increase. The Company recorded a right of use asset and lease liability obligation of $715,310 upon inception of these leases. The Company also reclassified a previously existing right-of-use asset of $66,271 from other assets to right-of-use asset.

As of December 31, 2022, the balance of right-of-use assets was approximately $216,800, and the balance of total lease liabilities was approximately $229,600.

Future minimum lease payments under non-cancelable operating leases under ASC 842 as of December 31, 2022 are as follows:

	Operating Lease Payments
Jan 2023 – Dec 2023	$ 200,927
Jan 2024 – Dec 2024	33,673
Total future minimum lease payments	234,600
Less: present value adjustment	(4,993)
Operating lease liabilities at December 31, 2022	229,607
Less: current portion of operating lease liabilities	(196,081)
Operating lease liabilities, net of current portion	**$ 33,526**

The components of rent expense and supplemental cash flow information related to leases for the period are as follows:

	Year Ended December 31, 2022
Lease Cost	
Operating lease cost (included in General and administrative expenses in the Company's Consolidated Statements of Operations)	$ 197,154
Other information	
Cash paid for amounts included in the measurement of lease liabilities for the year ended December 31, 2022	$ 180,786
Weighted average remaining lease term – operating leases (in years)	1.2
Average discount rate	3.5%

7. Financing Under Security Purchase Agreement

On July 13, 2021, the Company entered into a Securities Purchase Agreement (the "Purchase Agreement") with a single institutional investor (the "Investor") for aggregate gross proceeds of $10 million and net proceeds of approximately $9.2 million. The transaction closed on July 16, 2021. Under the Purchase Agreement, the Company sold and issued (i) 2 million shares of its common stock at a purchase price of $0.88 per share for total gross proceeds of approximately $1.76 million in a registered direct offering (the "Registered Direct Offering") and (ii) 8,240 shares of Series C 10.00% Convertible Preferred Stock (the "Preferred Stock") at a purchase price of $1,000 per share, for aggregate gross proceeds of approximately $8.24 million, in a concurrent private placement (the "Private Placement" and, together with the Registered Direct Offering, the "July 2021 Offerings"). The shares of the Preferred Stock are convertible, upon shareholder approval as described below, into an aggregate of up to 9,363,637 shares of common stock at a conversion price of $0.88 per share. Holders of the Preferred Stock shall be entitled to receive, and the Company shall pay, cumulative dividends at the rate per share (as a percentage of the stated value per share) of 10.00% per annum, payable quarterly on January 1, April 1, July 1 and October 1, beginning on the first such date after the date of issuance. The terms of the Preferred Stock include beneficial ownership limitations that preclude conversion that would result in the Investor owning in excess of 9.99% of the Company's outstanding shares of common stock. LadRx also issued to the Investor an unregistered preferred investment option (the "Preferred Investment Option") that allows for the purchase of up to 11,363,637 shares of common stock for additional gross proceeds of approximately $10 million if the Preferred Investment Option is exercised in full. The exercise price for the Preferred Investment Option is $0.88 per share. The Preferred Investment Option has a term equal to five and one-half years commencing upon the Company increasing its authorized common stock following shareholder approval.

The Company accounted for these transactions as a single transaction for accounting purposes and allocated total proceeds to the respective instruments based upon the relative fair value of each instrument. The Company determined that the relative fair value of (i) the 2,000,000 shares of the common stock issued was $859,218, (ii) the relative fair value of the 8,240 shares of Preferred Stock was $4,022,700, and (iii) the relative fair value of the Preferred Investment Option was $4,293,872 based upon a Black Scholes valuation model. As such, the Company recorded as Additional Paid in Capital the fair value of the common stock and Preferred Investment Option of $5,153,090, and the fair value of the Series C Preferred Stock was $4,022,700 which has been reflected as mezzanine (temporary equity) due to certain clauses of the Securities Purchase Agreement.

On October 1, 2021, the Company paid a quarterly 10% dividend to the Investor in the amount of $171,668. In 2022, the Company paid the following dividends: on January 1, 2022, $206,000, on April 1, 2022, $202,567, on July 1, 2022, $84,005 and on October 1, 2022, $68,809 for a total of $561,381.

On March 15, 2022, at a special meeting of its stockholders which was originally opened and subsequently adjourned on September 23, 2021, the Company's stockholders, by an affirmative vote of the majority of the Company's outstanding shares of capital stock, approved the amendment to the Company's Restated Certificate of Incorporation to effect an increase in the number of shares of authorized common stock, par value $0.001 per share, from 41,666,666 shares to 62,393,940 shares, and to make a corresponding change to the number of authorized shares of capital stock in order to comply with the Company's contractual obligations under the Purchase Agreement.

On March 28, 2022, the Investor converted 4,120 shares of the Series C Preferred Stock in accordance with the initial terms of the agreement and received 4,681,819 common shares. On May 15, 2022, the Investor converted a further 1,368 shares of the Series C Preferred Stock and received 1,554,130 common shares. As of December 31, 2022, there were 2,752 shares of Series C Preferred Stock outstanding, convertible into 3,127,689 shares of common stock.

Terms of Series C Preferred Stock

Under the Certificate of the Designations, Powers, Preferences and Rights of Series C 10.00% Convertible Preferred Stock (the "***Certificate of Designations***"), each share of Series C Preferred Stock will be convertible, subject to the Beneficial Ownership Limitation (as defined below), at either the holder's option or at the Company's option (a "***Company Initiated Conversion***") at any time following stockholder approval having been obtained to amend our restated certificate of incorporation to increase the number of authorized shares of common stock above 41,666,666 (the "Stockholder Approval"), into common stock at a conversion rate equal to the quotient of (i) the Series C Stated Value of $1,000 (the "***Series C Stated Value***") plus, in the case of a Company Initiated Conversion, all accrued and accumulated and unpaid dividends on such share of Series C Preferred Stock, divided by (ii) the initial conversion price of $0.88, subject to specified adjustments for stock splits, stock dividends, reclassifications or other similar events as set forth in the Certificate of Designations.

The Certificate of Designations contains limitations that prevent the holder thereof from acquiring shares of common stock upon conversion that would result in the number of shares of common stock beneficially owned by such holder and its affiliates exceeding 9.99% of the total number of shares of common stock outstanding immediately after giving effect to the conversion (the "***Beneficial Ownership Limitation***"), except that upon notice from the holder to the Company, the holder may increase or decrease the amount of ownership of outstanding shares of common stock after converting the holder's shares of Series C Preferred Stock, provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of outstanding shares of the common stock outstanding immediately after giving effect to the issuance of shares of common stock upon conversion of the shares of Series C Preferred Stock held by the holder and provided that any increase in the Beneficial Ownership Limitation shall not be effective until 61 days following notice to the Company

Each holder of shares of Preferred Stock is entitled to receive dividends, commencing from the date of issuance of the Preferred Stock. Such dividends may be paid only when, as and if declared by the Board of Directors of the Company (the "***Board***"), out of assets legally available therefore, quarterly in arrears on the first day of January, April, July and October in each year, commencing on the date of issuance, at the dividend rate of 10.00% per year. Such dividends are cumulative and continue to accrue on a daily basis whether or not declared and whether or not we have assets legally available therefore.

Under the Certificate of Designations, each share of Series C Preferred Stock carries a liquidation preference equal to the Series C Stated Value plus accrued and unpaid and accumulated dividends thereon. Such liquidation preference is payable upon certain change in control transactions and accordingly, this instrument is classified as mezzanine (temporary equity).

The holders of the Series C Preferred Stock may vote their shares of Preferred Stock on an as-converted basis, subject to the Beneficial Ownership Limitation (which Beneficial Ownership Limitation shall be calculated on a basis which includes the number of shares of common stock which are issuable upon conversion of the unconverted Series C Stated Value beneficially owned by a holder or any of its affiliates or attribution parties on all matters submitted to the holders of common stock for approval). The Company may not take the following actions without the prior consent of the holders of at least a majority of the Preferred Stock then outstanding: (a) alter or change adversely the powers, preferences or rights given to the Preferred Stock or alter or amend the Certificate of Designations, (b) authorize or create any class of stock ranking as to dividends, redemption or distribution of assets upon a Liquidation (as defined in the Certificate of Designations) senior to, or otherwise *pari passu* with, the Preferred Stock, (c) amend its Certificate of Incorporation or other charter documents in any manner that adversely affects any rights of the holders of the Preferred Stock, (d) increase the number of authorized shares of Preferred Stock, or (e) enter into any agreement with respect to any of the foregoing.

Terms of Preferred Investment Option

The Preferred Investment Option to purchase up to 11,363,637 shares of common stock is exercisable at a price of $0.88 per share. The Preferred Investment Option have a term of five and one-half years from the Authorized Share Increase Date. The holders of the Preferred Investment Option may exercise the Preferred Investment Option on a cashless basis, solely to the extent there is no effective registration statement registering, or the prospectus in such registration statement is not available for the resale of the shares of common stock issuable at the time of exercise. The Company is prohibited from effecting an exercise of any Preferred Investment Option to the extent that such exercise would result in the number of shares of common stock beneficially owned by such holder and its affiliates exceeding 9.99% of the total number of shares of common stock outstanding immediately after giving effect to the exercise of the Preferred Investment Options by the holder (the "***PIO Beneficial Ownership Limitation***"), except that upon notice from the holder to the Company, the holder may increase or decrease the amount of ownership of outstanding shares of Common Stock after exercising the holder's Preferred Investment Option, provided that the PIO Beneficial Ownership Limitation in no event exceeds 9.99% of the number of outstanding shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of common stock upon exercise of the Preferred Investment Option held by the holder and provided that any increase in the PIO Beneficial Ownership Limitation shall not be effective until 61 days following notice to the Company. The Preferred Investment Option provides for a Black-Scholes payout upon certain fundamental change transactions relating to the Company, as specified therein. If the fundamental change transaction is within the control of the Company, the payout will be in cash. Otherwise, the payout will be in the same form of consideration received by the common stockholders as a result of this transaction.

Registration Rights Agreement

In connection with the July 2021 Offerings, the Company entered into a registration rights agreement, dated as of July 13, 2021 (the "Registration Rights Agreement"), with the investor named therein, pursuant to which the Company will undertake to file, within five calendar days of the date of the filing of the proxy statement seeking the Stockholder Approval, a resale registration statement to register the shares of common stock issuable upon: (i) the conversion of the Preferred Stock sold in the Private Placement and (ii) the exercise of the Preferred Investment Option (the "***Registrable Securities***"); and to cause such registration statement to be declared effective under the Securities Act as promptly as possible after the filing thereof, but in any event no later than 75 days following the pricing date of this offering, or no later than 105 days following such date in the event of a "full review" by the SEC, and shall use its reasonable best efforts to keep such registration statement continuously effective under the Securities Act until the date that all Registrable Securities covered by such registration statement have been sold or are otherwise able to be sold pursuant to Rule 144. The Registration Rights Agreement provided for liquidated damages to the extent that the Company does not file or maintain a registration statement in accordance with the terms thereof. The registration rights agreement entered into between us and the Investor on July 13, 2021, contains a triggering event which would require us to pay to any holder of the Preferred Stock an amount in cash, as partial liquidated damages and not as a penalty, on a monthly basis equal to the product of 2.0% multiplied by the aggregate subscription amount paid by such holder for shares of Preferred Stock pursuant to the Purchase Agreement; provided, however, that such partial liquidated damages shall not exceed 24% of the aggregate subscription amounts paid by such holders pursuant to the Purchase Agreement, or $1,977,600. If we fail to pay any partial liquidated damages within seven days after the date payable, we will be required to pay interest on any such amounts at a rate equal to the lesser of 18% per annum or the maximum rate permitted by applicable law.

During the year ended December 31, 2021, the Company did not have enough authorized shares to issue the issuable shares under the Preferred Stock and Preferred Investment Option. The Company attempted, but was unsuccessful, to obtain stockholders' approval for the increase in authorized shares, and accordingly, the Company was unable to meet its registration rights obligation as of December 31, 2021. As such, the Company recognized an aggregate of approximately $1.1 million in liquidated damages during the year ended December 31, 2021, of which includes a provision of $615,123 as an accrual for estimated damages until stockholders' approval is achieved and the Registration Statement is filed. On March 15, 2022, the Company received its stockholders' approval to increase its authorized shares and filed a certificate of amendment to its Certificate of Incorporation to increase the number of authorized shares from 41,666,666 shares to 63,227,273 shares on the same date. The Company filed its registration statement registering the shares underlying the Registrable Securities on March 23, 2022 and has provided for liquidated damages through that date. As of December 31, 2022, all liquidated damages had been paid and we no longer have any liabilities related to the Registration Rights Agreement.

8. Series D Preferred Stock

On May 19, 2022, the Board declared a dividend of one one-thousandth of a share of Series D Preferred Stock, par value $0.01 per share ("Series D Preferred Stock"), for each outstanding share of Company's Common Stock to stockholders of record at 5:00 p.m. Eastern Time on May 20, 2022. The Certificate of Designation of Series D Preferred Stock (the "Series D Certificate of Designation") provides that all shares of Series D Preferred Stock that are not present in person or by proxy at any meeting of stockholders held to vote on the Reverse Stock Split (as defined in the Series D Certificate of Designation) and the Adjournment Proposal (as defined in the Series D Certificate of Designation) as of immediately prior to the opening of the polls at such meeting (the "Initial Redemption Time") will automatically be redeemed in whole, but not in part, by the Company at the Initial Redemption Time without further action on the part of the Company or the holder of shares of Series D Preferred Stock (the "Initial Redemption"). Any outstanding shares of Series D Preferred Stock that have not been redeemed pursuant to an Initial Redemption will be redeemed in whole, but not in part, (i) if such redemption is ordered by the Board in its sole discretion, automatically and effective on such time and date specified by the Board in its sole discretion or (ii) automatically upon the approval by the Company's stockholders of the Reverse Stock Split at any meeting of the stockholders held for the purpose of voting on such proposal (the "Subsequent Redemption").

On July 27, 2022, at the Company's 2022 Annual Meeting of Stockholders, the Company's stockholders approved a proposal to authorize the Board, in its discretion but prior to July 26, 2023, to amend the Company's Restated Certificate of Incorporation to effect a reverse stock split of all of the outstanding shares of the Company's Common Stock, at a ratio in the range of 1-for-2 to 1-for-100, with such ratio to be determined by the Board, and all outstanding shares of Series D Preferred Stock were automatically redeemed. As a result, no shares of Series D Preferred Stock remain outstanding. The stock split is not yet effective as of the date of this filing.

9. Stock Compensation

Stock Options

The Company has a 2008 Stock Incentive Plan under which 5 million shares of common stock are reserved for issuance. As of December 31, 2022, there were approximately 1.3 million shares subject to outstanding stock options and approximately 0.8 million shares outstanding related to restricted stock grants issued from the 2008 Plan. This plan expired on November 20, 2018 and thus no further shares are available for future grant under this plan.

In November 2019, the Company adopted a 2019 Stock Incentive Plan under which 5.4 million shares of common stock are reserved for issuance. As of December 31, 2022, there were 0.5 million shares subject to outstanding stock options and 25,000 shares outstanding related to restricted stock grants from the 2019 Plan. This Plan expires on November 14, 2029.

All outstanding options issued to employees, directors and consultants were fully vested in 2020. As such, no further stock compensation expense was recognized during the year ended December 31, 2022 and 2021.

There were no stock options issued to employees, directors and consultants in 2022 and 2021.

During the year ended December 31, 2022, options to acquire 50,000 shares of common stock were exercised on a cashless basis in exchange for 21,404 shares of common stock. During the year ended December 31, 2021, options to acquire 300,000 shares of common stock were exercised resulting in net proceeds of $78,000.

The following table sets forth the total stock-based compensation expense resulting from restricted stock included in our Consolidated Statements of Operations for the years ended December 31, 2022 and 2021:

	Years Ended December 31,	
	2022	**2021**
General and administrative – employee	$ 11,255	$ —
Total employee stock-based compensation	$ 11,255	$ —

	Stock Options		Weighted Average Exercise Price	
	2022	2021	2022	2021
Outstanding — beginning of year	2,462,820	2,801,270	$ 7.68	$ 7.68
Granted	—	—	—	—
Exercised	(50,000)	(300,000)	0.26	0.26
Forfeited	—	—	—	—
Expired	(1,012,712)	(38,450)	10.67	14.62
Outstanding — end of year	1,400,108	2,462,820	7.18	7.68
Exercisable at end of year	1,400,108	2,462,820	$ 7.18	$ 7.68
Weighted average fair value of stock options granted during the year:	$ —	$ —		

Presented below is the Company's non-employee stock option activity:

	Stock Options		Weighted Average Exercise Price	
	2022	2021	2022	2021
Outstanding — beginning of year	365,000	365,000	$ 5.49	$ 5.49
Granted	—	—	—	—
Exercised	—	—	—	—
Expired/Forfeited	—	—	—	—
Outstanding — end of year	365,000	365,000	5.49	5.49
Exercisable at end of year	365,000	365,000	$ 5.49	$ 5.49
Weighted average fair value of stock options granted during the year:	$ —	$ —		

The following table summarizes significant ranges of outstanding stock options under the two plans at December 31, 2022:

Range of Exercise Prices	Number of Options	Weighted-Average Remaining Contractual Life (years)	Weighted-Average Exercise Price	Number of Options Exercisable	Weighted-Average Remaining Contractual Life (years)	Weighted-Average Exercise Price
$ 0.26 - $1.00	500,000	6.95	$ 0.26	500,000	6.95	$ 0.26
$ 1.01 - $2.00	472,617	4.96	$ 1.75	472,617	4.96	$ 1.75
$ 2.01 - $3.00	161,388	3.96	$ 2.58	161,388	3.96	$ 2.58
$ 3.01 - $41.46	631,103	2.16	$ 16.93	631,103	2.16	$ 16.93
	1,765,108	4.43	$ 6.83	1,765,108	4.43	$ 6.83

There was no aggregate intrinsic value of the outstanding options and options vested as of December 31, 2022.

Restricted Stock

No restricted stock was granted in 2022. In December 2021, the Company granted to Jennifer Simpson, who serves on our Board of Directors, 25,000 shares of restricted common stock, pursuant to the 2019 Plan. This restricted stock vests on the first anniversary of the date of the grant. The fair value of the restricted stock is based on the market price of the Company's shares on the grant date less the par value received as consideration. The fair value of the restricted stock on the grant date was $11,200. As of December 31, 2022, there is no unamortized stock compensation.

Equity-Classified Warrants

A summary of the Company's warrant activity and related information for the years ended December 31, 2022 and 2021 are shown below.

	Warrants		Weighted Average Exercise Price	
	2022	**2021**	**2022**	**2021**
Outstanding — beginning of year	4,167	4,167	$ 33.60	$ 33.60
Granted	—	—	—	—
Exercised	—	—	—	—
Forfeited	—	—	—	—
Expired	—	—	—	—
Outstanding — end of year	4,167	4,167	33.60	33.60
Exercisable at end of year	4,167	4,167	$ 33.60	$ 33.60
Weighted average fair value of warrants granted during the year:	$ —	$ —		

The outstanding warrants as of December 31, 2022 had no intrinsic value.

9. Stockholder Protection Rights Plan

On December 13, 2019, the Board of Directors of the Company, authorized and declared a dividend of one right (a "Right") for each of the Company's issued and outstanding shares of common stock, par value $0.001 per share. The dividend was paid to the stockholders of record at the close of business on December 23, 2019. Each Right entitled the registered holder, subject to the terms of the Original Rights Agreement (as defined below), to purchase from the Company one one-thousandth of a share of the Company's Series B Junior Participating Preferred Stock, par value $0.01 per share (the "Preferred Stock"), at a price of $5.00 (the "Purchase Price"), subject to certain adjustments. The description and terms of the Rights were set forth in the Rights Agreement, dated as of December 13, 2019 (the "Original Rights Agreement"), by and between the Company and American Stock Transfer & Trust Company, LLC, as Rights Agent (the "Rights Agent").

On November 12, 2020, the Board approved an amendment and restatement of the Original Rights Agreement (as amended and restated, the "Amended and Restated Rights Agreement") to effect certain changes to the Original Rights Agreement, including (i) reducing the duration to a term of three years, subject to certain earlier expiration as described in more detail below, and (ii) lowering the beneficial ownership threshold at which a person or group of persons becomes an Acquiring Person (as defined below) to 4.95% or more of the Company's outstanding shares of Common Stock, subject to certain exceptions. The Amended and Restated Rights Agreement is designed to discourage (i) any person or group of persons from acquiring beneficial ownership of more than 4.95% of the Company's shares of Common Stock and (ii) any existing stockholder currently beneficially holding 4.95% or more of the Company's shares of Common Stock from acquiring additional shares of the Company's Common Stock.

The purpose of the Amended and Restated Rights Agreement is to protect value by preserving the Company's ability to utilize its net operating losses and certain other tax attributes (collectively, the "Tax Benefits") to offset potential future income tax obligations. The Company's ability to use its Tax Benefits would be substantially limited if it experiences an "ownership change," as such term is defined in Section 382 of the Internal Revenue Code of 1986, as amended (the "Tax Code"). A corporation generally will experience an ownership change if the percentage of the corporation's stock owned by its "5-percent shareholders," as defined in Section 382 of the Tax Code, increases by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. The Amended and Restated Rights Agreement is intended to reduce the likelihood the Company would experience an ownership change under Section 382 of the Tax Code.

The Rights will not be exercisable until the earlier to occur of (i) the close of business on the tenth business day after a public announcement or filing that a person or group of affiliated or associated persons has become an "Acquiring Person," which is defined as a person or group of affiliated or associated persons that, at any time after the date of the Amended and Restated Rights Agreement, has acquired, or obtained the right to acquire, beneficial ownership of 4.95% or more of the Company's outstanding shares of Common Stock, subject to certain exceptions or (ii) the close of business on the tenth business day after the commencement of, or announcement of an intention to commence, a tender offer or exchange offer the consummation of which would result in any person becoming an Acquiring Person (the earlier of such dates being called the "Distribution Date") (provided, however, that if such tender or exchange offer is terminated prior to the occurrence of the Distribution Date, then no Distribution Date shall occur as a result of such tender or exchange offer).

The Rights, which are not exercisable until the Distribution Date, will expire at or prior to the earliest of (i) the close of business on November 16, 2023; (ii) the time at which the Rights are redeemed pursuant to the Amended and Restated Rights Agreement; (iii) the time at which the Rights are exchanged pursuant to the Amended and Restated Rights Agreement; (iv) the time at which the Rights are terminated upon the occurrence of certain mergers or other transactions approved in advance by the Board; and (v) the close of business on the date set by the Board following a determination by the Board that (x) the Amended and Restated Rights Agreement is no longer necessary or desirable for the preservation of the Tax Benefits or (y) no Tax Benefits are available to be carried forward or are otherwise available (the earliest of (i), (ii), (iii), (iv) and (v) is referred to as the "**Expiration Date**").

Each share of Preferred Stock will be entitled, when, as and if declared, to a preferential per share quarterly dividend payment equal to the greater of (i) $1.00 per share or (ii) an amount equal to 1,000 times the dividend declared per share of Common Stock. Each share of Preferred Stock will entitle the holder thereof to 1,000 votes on all matters submitted to a vote of the stockholders of the Company. In the event of any merger, consolidation or other transaction in which shares of Common Stock are converted or exchanged, each share of Preferred Stock will be entitled to receive 1,000 times the amount received per one share of Common Stock.

The Purchase Price payable, and the number of shares of Preferred Stock or other securities or property issuable, upon exercise of the Rights are each subject to adjustment from time to time to prevent dilution (i) in the event of a stock dividend on, or a subdivision, combination or reclassification of the Preferred Stock, (ii) upon the grant to holders of the Preferred Stock of certain rights or warrants to subscribe for or purchase Preferred Stock or convertible securities at less than the then-current market price of the Preferred Stock or (iii) upon the distribution to holders of the Preferred Stock of evidences of indebtedness or assets (excluding regular periodic cash dividends or dividends payable in Preferred Stock) or of subscription rights or warrants (other than those referred to above). The number of outstanding Rights and the number of one one-thousandths of a share of Preferred Stock issuable upon exercise of each Right are also subject to adjustment in the event of a stock split, reverse stock split, stock dividends and other similar transactions involving the Common Stock.

In the event that any person or group of affiliated or associated persons becomes an Acquiring Person, each holder of a Right, other than the Rights beneficially owned by the Acquiring Person, affiliates and associates of the Acquiring Person and certain transferees thereof (which will thereupon become null and void), will thereafter have the right to receive upon exercise of a Right that number of shares of Common Stock having a market value of two times the Purchase Price.

In the event that, after a person or a group of affiliated or associated persons has become an Acquiring Person, the Company is acquired in a merger or other business combination transaction, or 50% or more of the Company's assets or earning power are sold, proper provision will be made so that each holder of a Right will thereafter have the right to receive, upon the exercise thereof at the then-current purchase price of the Right, that number of shares of common stock of the acquiring company having a market value at the time of that transaction equal to two times the Purchase Price.

With certain exceptions, no adjustment in the Purchase Price will be required unless such adjustment would require an increase or decrease of at least one percent (1%) in the Purchase Price. No fractional shares of Preferred Stock will be issued (other than fractions which are integral multiples of one one-thousandth of a share of Preferred Stock, which may, at the election of the Company, be evidenced by depositary receipts) and, in lieu thereof, an adjustment in cash will be made based on the market price of the Preferred Stock on the trading day immediately prior to the date of exercise.

At any time after any person or group of affiliated or associated persons becomes an Acquiring Person and prior to the acquisition of beneficial ownership by such Acquiring Person of 50% or more of the outstanding shares of Common Stock, the Board, at its option, may exchange each Right (other than Rights owned by such person or group of affiliated or associated persons which will have become void), in whole or in part, at an exchange ratio of one share of Common Stock per outstanding Right (subject to adjustment).

In connection with any exercise or exchange of the Rights, no holder of a Right will be entitled to receive shares of Common Stock if receipt of such shares would result in such holder, together with such holder's affiliates and associates, beneficially owning more than 4.95% of the then-outstanding Common Stock (such shares, the "Excess Shares") and the Board determines that such holder's receipt of Excess Shares would jeopardize or endanger the value or availability of the Tax Benefits or the Board otherwise determines that such holder's receipt of Excess Shares is not in the best interests of the Company. In lieu of such Excess Shares, such holder will only be entitled to receive cash or a note or other evidence of indebtedness with a principal amount equal to the then-current market price of the Common Stock multiplied by the number of Excess Shares that would otherwise have been issuable.

At any time before the Distribution Date, the Board may redeem the Rights in whole, but not in part, at a price of $0.001 per Right (subject to certain adjustments) (the "Redemption Price"). The redemption of the Rights may be made effective at such time, on such basis and with such conditions as the Board in its sole discretion may establish.

Immediately upon the action of the Board electing to redeem or exchange the Rights, the Company shall make a public announcement thereof, and upon such election, the right to exercise the Rights will terminate and the only right of the holders of Rights will be to receive the Redemption Price.

Until a Right is exercised or exchanged, the holder thereof, as such, will have no rights as a stockholder of the Company, including, without limitation, the right to vote or to receive dividends.

The Board may amend or supplement the Amended and Restated Rights Agreement without the approval of any holders of Rights, including, without limitation, in order to (a) cure any ambiguity, (b) correct inconsistent provisions, (c) alter time period provisions, including the Expiration Date, or (d) make additional changes to the Amended and Restated Rights Agreement that the Board deems necessary or desirable. However, from and after the date any person or group of affiliated or associated persons becomes an Acquiring Person, the Amended and Restated Rights Agreement may not be supplemented or amended in any manner that would adversely affect the interests of the holders of Rights.

10. Income Taxes

At December 31, 2022, the Company had federal and state net operating loss carryforwards ("NOLs") of $338.3 million and $263.1 million, respectively, available to offset against future taxable income. Of this amount, $310.6 million of federal NOLs expire in 2024 through 2037. The federal operating losses after 2018 totaling $27.7 million carry forward indefinitely but are only able to offset 80% of taxable income in future years. The California NOLs expire in 2029 through 2042.

As a result of a change in-control that occurred in the LadRx shareholder base, approximately $66.1 million in federal net operating loss carryforwards became substantially limited in their annual availability. Management currently believes that the remaining $272.1 million in federal net operating loss carryforwards, and the $263.1 million in state net operating loss carryforwards, are unrestricted.

As of December 31, 2022, LadRx also had research and development tax credits for federal and state purposes of approximately $15.4 million and $22.0 million, respectively, available for offset against future income taxes, which expire in 2022 through 2036. The credits are subject to change-in-control limitations, which may affect their utilization in future years. Based on an assessment of all available evidence including, but not limited to, the Company's limited operating history in its core business and lack of profitability, uncertainties of the commercial viability of its technology, the impact of government regulation and healthcare reform initiatives, and other risks normally associated with biotechnology companies, the Company has concluded that it is more likely than not that these net operating loss carryforwards and credits will not be realized and, as a result, a 100% deferred tax valuation allowance has been recorded against these assets.

Deferred income taxes reflect the net effect of temporary differences between the financial reporting carrying amounts of assets and liabilities and income tax carrying amounts of assets and liabilities. The components of the Company's deferred tax assets and liabilities, all of which are long-term, are as follows (in thousands):

	December 31,	
	2022	2021
Deferred tax assets:		
Net operating loss carryforwards	$ 74,903	$ 74,167
Tax credit carryforwards	37,353	37,866
Equipment, furnishings and other	19	4,174
Total deferred tax assets	112,275	116,207
Deferred tax liabilities	—	—
Net deferred tax assets	112,275	116,207
Valuation allowance	(112,275)	(116,207)
	$ —	$ —

For all years presented, the Company did not recognize any deferred tax assets or liabilities. The net change in valuation allowance for the years ended December 31, 2022 and 2021 was $3.9 million and $1.6 million, respectively.

The provision for income taxes differs from the provision computed by applying the Federal statutory rate to net loss before income taxes as follows (in thousands):

	Years ended December 31,	
	2022	2021
Federal benefit at statutory rate	$ (1,000)	$ (2,745)
State income taxes, net of Federal taxes	(333)	(913)
State credits	—	—
Warrant liabilities	—	—
Other permanent differences	261	1,685
Provision related to change in valuation allowance	957	1,947
Federal rate adjustment	—	—
NQ Options	—	—
Current year tax credit	—	—
NOL Adjustments	—	—
Termination/Cancellation of Equity Compensation Awards	—	—
Return to provision	115	26
Other, net	—	—
	$ —	$ —

There have been no changes to the Company's liability for unrecognized tax benefits during the year ended December 31, 2022.

The Company files income tax returns in the U.S. Federal jurisdiction and various state jurisdictions. As of the year ended December 31, 2022, the tax returns for 2019 through 2022 remain open to examination by the Internal Revenue Service and for 2017 to 2021 for various state tax authorities.

The Company's policy is to recognize any interest and penalties related to unrecognized tax benefits as a component of income tax expense. As of the date of adoption of ASC 740 and the years ended December 31, 2022 and 2021, the Company had accrued no interest or penalties related to uncertain tax positions.

11. Commitments and Contingencies

Commitments

Aldoxorubicin

The agreement relating to our worldwide rights to aldoxorubicin provides for our payment of up to an aggregate of $7.5 million upon meeting specified clinical and regulatory milestones up to and including the product's second, final marketing approval. We also will be obliged to pay:

- commercially reasonable royalties based on a percentage of net sales (as defined in the agreement);
- a percentage of any non-royalty sub-licensing income (as defined in the agreement); and
- milestones of $1,000,000 for each additional final marketing approval that we might obtain.

Arimoclomol

The agreement relating to our worldwide rights to arimoclomol provides for our payment of up to an aggregate of $3.65 million upon receipt of milestone payments from KemPharm.

Innovive

Under the merger agreement by which we acquired Innovive, we agreed to pay the former Innovive stockholders a total of up to approximately $18.3 million of future earnout merger consideration, subject to our achievement of specified net sales under the Innovive license agreements. The earnout merger consideration, if any, will be payable in shares of our common stock, subject to specified conditions, or, at our election, in cash or by a combination of shares of our common stock and cash. Our common stock will be valued for purposes of any future earnout merger consideration based upon the trading price of our common stock at the time the earnout merger consideration is paid.

As of December 31, 2022, no amounts are due under the above agreements.

Contractual obligations

LadRx's current contractual obligations that will require future cash payments for the following Employment Agreements as follows (in thousands):

	Employment Agreements (1)
2023	961
2024	936
2025	936
2026	468
Thereafter	—
Total	$ 3,301

(1) Employment agreements include management contracts which have been revised from time to time. The employment agreements for the Company's executive officers provide for minimum salaries, which are adjusted annually at the discretion of the Company's Compensation Committee, and in some cases provide for minimum annual bonuses and employee benefits, as well. New employment agreements for the Company's other executive officers are usually entered into annually.

Contingencies

The Company is occasionally involved in legal proceedings and other matters arising from the normal course of business. On November 30, 2022, Jerald Hammann ("Hammann") filed a complaint (the "Complaint") against the Company, Mr. Caloz, and Mr. Kriegsman (together, "Defendants") in the Court of Chancery of the State of Delaware, alleging various violations of a Cooperation Agreement, dated August 21, 2020, by and between the Company and Hammann. The Complaint alleges breaches of a provision limiting the Board's ability to effect discretionary compensation and a non-disparagement provision. The Complaint further alleges a breach of a purported implied obligation that the Company disclose various internal records to Hammann. Defendants believe the Complaint is wholly without merit and have moved to dismiss the Complaint in its entirety. Defendants intend to litigate vigorously against Hammann's claims.

The Company intends to vigorously defend against any complaint. We have directors' and officers' liability insurance, which will be utilized, after the deductible, in the defense of any matter involving our directors or officers.

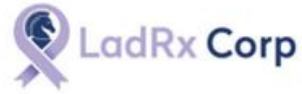
The Company evaluates developments in legal proceedings and other matters on a quarterly basis. If an unfavorable outcome becomes probable and reasonably estimable, we could incur charges that could have a material adverse impact on our financial condition and results of operations for the period in which the outcome becomes probable and reasonably estimable.

In December 2019, a novel strain of coronavirus, COVID-19, was first identified in China and has surfaced in several regions across the world. In March 2020, the disease was declared a pandemic by the World Health Organization. As the situation with Covid-19 continues to evolve, the companies which are working to further develop and commercialize our products, ImmunityBio and Orphazyme, could be materially and adversely affected by the risks, or the public perception of the risks, related to this pandemic. Among other things, the active and planned clinical trials by ImmunityBio and Orphazyme and their regulatory approvals, if any, may be delayed or interrupted, which could delay or adversely affect the Company's potential receipt of milestone and royalty payments within the disclosed time periods and increase expected costs. As of the date of this filing, senior management and administrative staff are working primarily remotely.

12. Subsequent Events

On January 1, 2023, the Company paid a quarterly dividend to its holder of Series C Preferred Stock of $68,809.

On January 31, 2023, 1,342 Series C Preferred Stock was converted to 1,525,000 common shares.



_________ Units, each unit consisting of one share of common stock and one warrant to purchase [ ] share of common stock

Up to shares of common stock underlying the warrants included in the Units

PRELIMINARY PROSPECTUS

, 2023

ROTH CAPITAL PARTNERS

PART II:

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the various costs and expenses payable by us in connection with the sale of the securities being registered. All such costs and expenses shall be borne by us. Except for the SEC registration fee, all the amounts shown are estimates.

SEC registration fee	$	2,644.80
FINRA filing fee		*
Nasdaq listing fee		*
Printing and engraving costs		*
Legal fees and expenses		*
Accounting fees and expenses		*
Transfer agent and registrar fees		*
Miscellaneous fees and expenses		*
Total	$	*

* To be filed by amendment.

Item 14. Indemnification of Directors and Officers

Our Certificate of Incorporation and By-Laws provide that we will indemnify our directors, officers, employees and agents to the fullest extent and in the manner permitted by the provisions of the General Corporation Law of the State of Delaware, as amended from time to time, subject to any permissible expansion or limitation of such indemnification, as may be set forth in any stockholders' or directors' resolution or by contract. Any repeal or modification of these provisions approved by our stockholders will be prospective only and will not adversely affect any limitation on the liability of any of our directors or officers existing as of the time of such repeal or modification.

Sections 145 and 102(b)(7) of the General Corporation Law of the State of Delaware provide that a corporation may indemnify any person made a party to an action by reason of the fact that he or she was a director, executive officer, employee or agent of the corporation or is or was serving at the request of a corporation against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action if he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of an action by or in right of the corporation, no indemnification may generally be made in respect of any claim as to which such person is adjudged to be liable to the corporation.

We have purchased and currently intend to maintain insurance on behalf of each and any person who is or was our director or officer against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

See also the undertakings set out in response to Item 17 herein.

Item 15. Recent Sales of Unregistered Securities.

The following is a summary of all securities that we have sold during the last three years without registration under the Securities Act.

On July 13, 2021, we entered into the Purchase Agreement with the Investor, pursuant to which we agreed to sell in the Registered Direct Offering, 20,000 shares of our common stock, par value $0.001 per share, at a price of $88.00 per share (the "Shares"). Concurrently with the sale of the Shares in the Registered Direct Offering, in the Private Placement, we also agreed to sell to the Investor an additional 8,240 shares of our Series C Preferred Stock at a price of $1,000 per share, initially convertible into an aggregate of up to 93,636 shares of our common stock, at a conversion price of $88.00 per share, together with the Preferred Investment Options to purchase up to 113,636 shares of common stock, at an exercise price of $88.00. The Preferred Investment Options have a term of five and one-half years, commencing the Authorized Share Increase Date. The aggregate gross proceeds to us from the July 2021 Offerings were $10 million with additional gross proceeds of up to approximately $10 million if the Preferred Investment Options are exercised in full for cash. The July 2021 Offerings closed on July 16, 2021. The shares of Series C Preferred Stock and the Preferred Investment Options in the July 2021 Offerings were issued pursuant to the exemptions provided by Section 4(a)(2) of the Securities Act and/or Regulation D promulgated thereunder, and in reliance on similar exemptions under applicable state laws.

Item 16. Exhibits and Financial Statement Schedules.

(a) The Exhibit Index is hereby incorporated herein by reference.

		Incorporated By Reference to			
Exhibit Number	**Description**	**Form**	**Exhibit**	**Filing Date**	**Filed / Furnished Herewith**
1.1	Form of Underwriting Agreement				**
2.1	Agreement and Plan of Merger, dated as of June 6, 2008, among CytRx Corporation, CytRx Merger Subsidiary, Inc., Innovive Pharmaceuticals, Inc., and Steven Kelly	8-K	2.1	6/9/2008	
3.1	Restated Certificate of Incorporation of CytRx Corporation, as amended	10-K	3.1	3/13/2012	
3.2	Certificate of Amendment of Restated Certificate of Incorporation	8-K	3.1	5/15/2012	
3.3	Certificate of Amendment of Restated Certificate of Incorporation	8-K	3.1	11/1/2017	
3.4	Certificate of Amendment of Restated Certificate of Incorporation	8-K	3.1	3/16/2022	
3.5	Certificate of Elimination of Designation of Series A Junior Participating Preferred Stock	8-K	3.2	12/19/2019	
3.6	Certificate of Elimination of Series B Convertible Preferred Stock	8-K	3.3	12/19/2019	
3.7	Amended and Restated Certificate of Designation of Preferences, Rights and Limitations of Series B Convertible Preferred Stock	8-K	3.1	11/17/2020	
3.8	Amended and Restated By-Laws of CytRx Corporation, effective November 12, 2020 and Amendment No. 1 to the Amended and Restated Bylaws of dated May 19, 2022.	8-K	3.2	5/19/2022	
3.9	Certificate of the Designations, Powers, Preferences and Rights of Series C 10.00% Convertible Preferred Stock	8-K	3.1	7/15/2021	
3.10	Certificate of Amendment of Restated Certificate of Incorporation	8-K	3.1	3/16/2022	
3.11	Certificate of Correction to the Certificate of Amendment of Restated Certificate of Incorporation	8-K	3.3	5/19/2022	
3.12	Certificate of Designation of Series D Preferred Stock	8-K	3.1	5/19/2022	
3.13	Certificate of Amendment of Restated Certificate of Incorporation	8-K	3.1	9/23/2022	
4.1	Amended and Restated Rights Agreement, dated as of November 16, 2020, by and between CytRx Corporation and American Stock Transfer & Trust Company, LLC, as rights agent	8-K	4.1	11/17/2020	
4.3	Form of Preferred Investment Option	8-K	4.1	7/15/2021	
4.4	Form of Warrant				**
5.1	Opinion of Haynes and Boone				**
10.1+	CytRx Corporation Amended and Restated 2008 Stock Incentive Plan	10-K	10.6	3/13/2012	
10.1.2+	Eighth Amendment to Amended and Restated CytRx Corporation 2008 Stock Incentive Plan	14A (proxy)	Annex B	5/20/2016	
10.1.3+	Form of Non-qualified Stock Option for grants to non-employee directors under Amended and Restated 2008 Stock Incentive Plan.	10-K	10.11	3/11/2016	
10.1.4+	Form of Non-qualified Stock Option for grants to executive officers under Amended and Restated 2008 Stock Incentive Plan.	10-K	10.12	3/11/2016	
10.1.5+	Form of Non-qualified Stock Option for grants to Steven A. Kriegsman and Daniel J. Levitt, M.D., Ph.D., under Amended and Restated 2008 Stock Incentive Plan.	10-K	10.13	3/11/2016	
10.1.6+	Amendment No. 1 to Stock Option Agreements of Daniel J. Levitt, M.D., Ph.D., dated December 31, 2015.	10-K	10.14	3/11/2016	
10.1.7+	Amendment No. 1 to Stock Option Agreements (2000 Long-Term Incentive Plan) of Steven A. Kriegsman, dated March 8, 2016.	10-K	10.15	3/11/2016	

Exhibit Number	Description	Incorporated By Reference to			Filed / Furnished Herewith
		Form	Exhibit	Filing Date	
10.1.8+	Amendment No. 1 to Stock Option Agreements (2008 Stock Incentive Plan) of Steven A. Kriegsman, dated March 8, 2016	10-K	10.16	3/11/2016	
10.2†	License Agreement, dated December 7, 2001, by and between CytRx Corporation and Vical Incorporated	8-K	99	12/21/2001	
10.3	Office Lease between The Kriegsman Capital Group, LLC and Douglas Emmett Joint Venture, dated April 13, 2000	10-K	10.63	5/14/2004	
10.3.1	Assignment, Assumption and Consent, effective July 1, 2003, by and among CytRx Corporation, The Kriegsman Capital Group, LLC and Douglas Emmett Joint Venture, concerning Office Lease dated April 13, 2000	10-K	10.64	5/14/2004	
10.3.2	Fifth Amendment to Office Lease dated January 13, 2020 by and between CytRx Corporation and Douglas Emmett 1993, LLC	10-K	10.3.2	3/24/2021	
10.4†	License Agreement dated April 17, 2006 between Innovive Pharmaceuticals, Inc. and KTB Tumorforschungs GmbH	10-Q	10.15	11/14/2006	
10.4.1	Amendment dated March 14, 2014 to License Agreement between CytRx Corporation and KTB Tumorforschungs GmbH	8-K	1.1	3/17/2014	
10.5	Asset Purchase Agreement dated May 13, 2011 between CytRx Corporation and Orphazyme ApS	10-Q	10.1	5/17/2011	
10.6	Exclusive License Agreement, dated as of July 27, 2017, by and between CytRx Corporation and NantCell, Inc.	8-K	10.1	8/1/2017	
10.7	Amended and Restated Employment Agreement, dated March 26, 2019, by and between CytRx Corporation and Steven A. Kriegsman	10-K	10.18	3/29/2019	
10.7.1	First Amendment, dated December 19, 2019, to Amended and Restated Employment Agreement, dated March 26, 2019, by and between CytRx Corporation and Steven A. Kriegsman	8-K	10.1	12/19/2019	
10.8+	Employment Agreement, dated December 16, 2021, by and between CytRx Corporation and John Y. Caloz	10-K	10.8	3/23/2022	
10.9	CytRx Corporation 2019 Stock Incentive Plan	8-K	10.1	11/15/2019	
10.10	Form of Securities Purchase Agreement, dated as of July 13, 2021, by and between the Company and the purchaser thereto	8-K	10.1	7/15/2021	
10.11	Form of Registration Rights Agreement, dated as of July 13, 2021, by and between the Company and the purchaser thereto	8-K	10.2	7/15/2021	
10.12	Amendment No. 1 to the Cooperation Agreement, dated September 2, 2021, by and between CytRx Corporation and Jerald A. Hammann	8-K	10.1	9/9/2021	
10.13+	Employment Agreement, dated January 3, 2022, by and between CytRx Corporation and Dr. Stephen Snowdy	8-K	10.1	1/4/2022	
10.14+	General Release and Separation Agreement, dated January 3, 2022, by and between CytRx Corporation and Steven A. Kriegsman.	8-K	10.2	1/4/2022	
10.15+	Employment Agreement, dated December 30, 2022, by and between LadRx Corporation and Dr. Stephen Snowdy.	10-K	10.15	3/20/2023	
10.16+	Employment Agreement, dated December 30, 2022, by and between LadRx Corporation and John Y. Caloz	10-K	10.16	3/20/2023	
23.1	Consent of Weinberg & Company				
23.2	Consent of Haynes and Boone, LLP (included in Exhibit 5.1)				**
24.1	Power of Attorney				*
107	Filing Fee Table				*

+ Indicates a management contract or compensatory plan or arrangement.
* Filed herewith.
** To be filed by amendment.
† Confidential treatment has been requested or granted for certain portions which have been blanked out in the copy of the exhibit filed with the SEC. The omitted information has been filed separately with the SEC.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, that:

Paragraphs (1)(i), (1)(ii) and (1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Exchange Act that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) The undersigned registrant hereby undertakes that:

(i) For purposes of determining any liability under the Securities Act, the information omitted from a form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933, as amended, shall be deemed to be part of this registration statement as of the time it was declared effective.

(ii) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(5) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(6) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Los Angeles, State of California, on April 14, 2023.

LADRX CORPORATION

By: */s/ Stephen Snowdy*
Dr. Stephen Snowdy
Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below hereby appoints John Y. Caloz as his or her true and lawful attorney-in-fact, with full power of substitution, and with the authority to execute in the name of each such person, any and all amendments (including without limitation, post-effective amendments) to this registration statement on Form S-1, to sign any and all additional registration statements relating to the same offering of securities as this registration statement that are filed pursuant to Rule 462(b) of the Securities Act and to file such registration statements with the SEC, together with any exhibits thereto and other documents therewith, necessary or advisable to enable the registrant to comply with the Securities Act of 1933, and any rules, regulations and requirements of the SEC in respect thereof, which amendments may make such other changes in the registration statement as the aforesaid attorney-in-fact executing the same deems appropriate.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Stephen Snowdy Dr. Stephen Snowdy	Chief Executive Officer (Principal Executive Officer)	April 14, 2023
/s/ John Y. Caloz John Y. Caloz	Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	April 14, 2023
/s/ Jennifer Simpson Jennifer Simpson, Ph.D.	Chair of the Board	April 14, 2023
/s/ Joel Caldwell Joel Caldwell	Director	April 14, 2023
/s/ Cary Claiborne Cary Claiborne	Director	April 14, 2023

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation in the foregoing Registration Statement on Form S-1 of our report dated March 23, 2023 relating to the consolidated financial statements of LadRx Corporation as of December 31, 2022 and 2021, and for the years then ended (which report includes an explanatory paragraph relating to substantial doubt about the Company's ability to continue as a going concern). We also consent to the reference to our firm under the caption "Experts.

/s/ Weinberg & Company

Los Angeles, California
April 14, 2023

Exhibit 107

Calculation of Filing Fee Table
FORM S-1
(Form Type)

LADRX CORPORATION
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price (1)(2)(3)	Fee Rate	Amount of Registration Fee
Fees to be paid	Equity	Units, each unit consisting of (i) one share of common stock, par value $0.001 per share, and (ii) one warrant to purchase one share of common stock(4)	457(o)			$12,000,000.00	$0.00011020	$ 2,644.80
Fees to be paid	Equity	Shares of common stock, par value $0.001 per share, included in the units (4)	457(i)			(4)		
Fees to be paid	Equity	Warrants included in the units	457(i)			(4)(5)	-	-
Fees to be paid	Equity	Shares of common stock, par value $0.001 per share, issuable upon exercise of the warrants included in the units	457(o)			$12,000,000.00	$0.00011020	-
Fees to be paid	Equity	Total Offering Amounts				$24,000,000.00		$ 2,644.80
		Total Fees Previously Paid						$ -
		Total Fee Offsets						$ -
		Net Fee Due						$ 2,644.80

1. Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act").

2. Pursuant to Rule 416 under the Securities Act, the securities being registered hereunder include such indeterminate number of additional securities as may be issuable to prevent dilution resulting from stock splits, dividends or similar transactions.
3. Includes the aggregate offering price of any additional shares of common stock and/or warrants to purchase shares of common stock that may be acquired by the underwriters to cover the option to purchase additional securities, if any.

4. No additional registration fee is payable pursuant to Rule 457(i) under the Securities Act.

5. Consistent with the response to Question 240.06 of the Securities Act Rules Compliance and Disclosure Interpretations, the registration fee with respect to the warrants included in the units has been allocated to the shares of common stock underlying such warrants and those shares of common stock are included in the registration fee as calculated herein.