

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

FORM S-1
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

CELLECTAR BIOSCIENCES, INC.
 (Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	2834 (Primary Standard Industrial Classification Code Number)	04-3321804 (I.R.S. Employer Identification No.)
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Approximate date of commencement of proposed sale to the public:
 As soon as practicable after this Registration Statement becomes 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. ☒ x

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 Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒ x 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 of 1933, as amended, 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 is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

**Subject to Completion
Dated June 26, 2025**

Preliminary Prospectus



Up to 755,667 Class A Units with each Class A Unit consisting of (i) one (1) Share of Common Stock and (ii) one (1) Common Warrant to purchase one (1) Share of Common Stock

Or

Up to 755,667 Class B Units with each Class B Unit consisting of (i) one (1) Pre-Funded Warrant to Purchase one (1) Share of Common Stock and (ii) one (1) Common Warrant to purchase one (1) Share of Common Stock

Up to 45,340 Representative Warrants to Purchase up to 45,340 Shares of Common Stock

Up to 1,556,674 Shares of Common Stock Issuable Upon Exercise of up to (i) 755,667 Pre-Funded Warrants, (ii) up to 755,667 Common Warrants and (iii) up to 45,340 Representative Warrants

We are offering up to 755,667 Class A Units (the "Class A Units") with each Class A Unit consisting of (i) one (1) share of our common stock, par value \$0.00001 per share (the "common stock") and (ii) one (1) warrant to purchase one (1) share of common stock (each, a "Common Warrant") at an assumed public offering price of \$7.94 per Class A Unit (which is the last reported sale price of our common stock on The Nasdaq Capital Market on June 25, 2025).

We are also offering to certain purchasers whose purchase of Class A Units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if any such purchaser so chooses, up to 755,667 Class B Units (the "Class B Units"), with each Class B Unit consisting of (i) one (1) pre-funded warrant (each, a "Pre-Funded Warrant") to purchase one (1) share of common stock, in lieu of shares of common stock and (ii) one (1) Common Warrant. The purchase price of each Class B Unit will be equal to the public offering price for Class A Units in this offering, minus \$0.00001. Each Pre-Funded Warrant is exercisable for one (1) share of our common stock and has an exercise price of \$0.00001 per share, and a perpetual term. For each Class B Unit that we sell, the number of Class A Units we are offering will be reduced on a one-for-one basis. This prospectus also relates to the offering of common stock issuable upon exercise of the Pre-Funded Warrants and Common Warrants. We collectively refer to the Class A Units, Class B Units, the shares of common stock, Pre-Funded Warrants, Common Warrants and the shares of common stock underlying the Pre-Funded Warrants and Common Warrants as the "securities."

The Class A Units and Class B Units will not be certificated and the shares of common stock, Pre-Funded Warrants, and Common Warrants are immediately separable and will be issued separately in this offering. Each Common Warrant will be exercisable immediately upon issuance, have a term of five (5) years from the date of issuance and an exercise price equal to \$.

The underwriters have the option to purchase up to 113,350 additional shares of common stock and/or additional Common Warrants to purchase up to an additional 113,350 shares of common stock solely to cover over-allotments, if any, at the public offering price, less the underwriting discounts and commissions. The over-allotment option may be used to purchase shares of common stock and/or Common Warrants, or any combination thereof, as determined by the underwriters. The overallotment option is exercisable for forty-five days from the date of this prospectus.

Our common stock is listed on The Nasdaq Capital Market under the symbol “CLRB”. On June 25, 2025, the last reported sale price of our common stock was \$7.94 per share. The assumed public offering price may not be indicative of the final public offering price. The final public offering price will be determined through negotiation between us and the underwriters based upon a number of factors, including our history and our prospects, the industry in which we operate, our past and present operating results and the general condition of the securities markets at the time of this offering and may be at a discount to the current market price.

On June 24, 2025, a reverse stock split of our outstanding shares of common stock took effect at a ratio of one-for-thirty (the “Reverse Stock Split”), which was approved by our Board of Directors and majority of stockholders, and consummated pursuant to a Certificate of Amendment filed with the Secretary of State of Delaware on June 23, 2025. There will be no change to the number of authorized shares or the par value per share. Unless the context expressly dictates otherwise, all references to share and per share amounts referred to in this prospectus give effect to the Reverse Stock Split. However, our periodic and current reports that are incorporated by reference, and all other documents that were filed prior to June 24, 2025, do not give effect to the Reverse Stock Split.

Investing in our securities involves a high degree of risk. Before making an investment decision, please read the information under “Risk Factors” beginning on page 17 of this prospectus and under similar headings in any amendment or supplement to this prospectus or in any filing with the Securities and Exchange Commission that is incorporated by reference herein.

	Class A Unit	Class B Unit	Total
Public offering price (1)	\$	\$	\$
Underwriting discounts and commissions (2)	\$	\$	\$
Proceeds to us, before expenses (3)	\$	\$	\$

- (1) The public offering price and underwriting discount corresponds to (i) a public offering price per Class A Unit of \$ (\$ net of the underwriting discount) and (ii) a public offering price per Class B Unit of \$ (\$ net of the underwriting discount).
- (2) We have agreed to reimburse the representative of the underwriters for certain expenses and issue the representative, or its designees, warrants to purchase up to 6.0% of the number of Class A Units and Class B Units sold in this offering, including shares of common stock sold pursuant to the over-allotment option, if any. See “Underwriting” on page 56 for additional information regarding underwriting compensation.
- (3) The above summary of offering proceeds does not give effect to any proceeds from the cash exercise of any Pre-Funded Warrants, Common Warrants, or representative warrants being issued in this offering.

The underwriters expect to deliver the securities to purchasers in the offering on or about , 2025.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

Ladenburg Thalmann

The date of this prospectus is , 2025.

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The registration statement we filed with the Securities and Exchange Commission, or the SEC, includes exhibits that provide more detail of the matters discussed in this prospectus. You should read this prospectus, the related exhibits filed with the SEC, and the documents incorporated by reference herein before making your investment decision. You should rely only on the information provided in this prospectus and the documents incorporated by reference herein or any amendment thereto. In addition, this prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading “Where You Can Find Additional Information.” Information contained in later-dated documents incorporated by reference will automatically supplement, modify or supersede, as applicable, the information contained in this prospectus or in earlier-dated documents incorporated by reference.

We have not authorized anyone to provide any information or to make any representations other than those contained in this prospectus, the documents incorporated by reference herein or in any free writing prospectuses 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 you. The information contained in this prospectus, the documents incorporated by reference herein or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus is an offer to sell only the securities offered hereby, and only under circumstances and in jurisdictions where it is lawful to do so. We are not, and the underwriters are not, making an offer to sell these securities in any state or jurisdiction where the offer or sale is not permitted.

The terms “Collectar Biosciences,” “Collectar,” the “Company,” “our,” “us” and “we,” as used in this prospectus, refer to Collectar Biosciences, Inc., a Delaware corporation, and its subsidiaries unless we state otherwise or the context indicates otherwise.

SUMMARY

This summary highlights information contained elsewhere in this prospectus. Because it is a summary, it may not contain all of the information that is important to you. Accordingly, you are urged to carefully read the entire prospectus, any applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading "Risk Factors" contained in any applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Company Overview

We are a late-stage clinical biopharmaceutical company focused on the discovery, development and commercialization of drugs for the treatment of cancer. Our core objective is to leverage our proprietary phospholipid ether drug conjugate™ (PDC™) delivery platform to develop PDCs that are designed to specifically target cancer cells and deliver improved efficacy and better safety as a result of fewer off-target effects. We believe that our PDC platform possesses the potential for the discovery and development of the next generation of cancer-targeting treatments, and we plan to develop PDCs both independently and through research and development collaborations. On April 30, 2025, we announced that we will explore a full range of strategic alternatives to advance our platform and radiopharmaceutical drug development pipeline. Strategic alternatives under consideration may include, but are not limited to mergers, acquisitions, partnerships, joint ventures, licensing arrangements or other strategic transactions.

The Company is primarily focused on the development of its radioconjugate PDC programs, also known as phospholipid radioconjugates or PRCs, designed to provide targeted delivery of a radioisotope directly to cancer cells, while limiting exposure to healthy cells. We believe this profile differentiates our PRCs from many traditional on-market treatments and radiotherapeutics. Our three lead programs are: CLR 121125 (CLR 125), an iodine-125 Auger-emitting program, prepared to enter a clinical trial in 2025; CLR 121225 (CLR 225), an actinium-225 based program; and iopofosine I 131 (iopofosine I 131, or simply iopofosine), a beta-emitting iodine-131 based program which has been studied extensively, as described below. On June 4, 2025, the Company announced that the U.S Food and Drug Administration (the "FDA") has granted Breakthrough Therapy Designation for iopofosine I 131, as a radioconjugate monotherapy for the treatment of relapsed/refractory Waldenstrom macroglobulinemia (r/r WM).

- CLR 125, the Auger-emitting PRC, utilizes iodine-125 and has been observed to show tolerability with minimal toxicities in animal models. Additionally, the Company observed CLR 125 to have good activity in multiple solid tumor models, especially in triple negative breast cancer. Auger emitters provide the greatest precision in targeted radiotherapy as the emission can only travel a few nanometers. The Company believes that this means that to cause the necessary breakage of the tumor cell DNA, the isotope must get inside the cell and near the cell nucleus to be effective. The Company believes that CLR 125 achieves this due to the Company's novel phospholipid ether drug conjugate platform. CLR 125 is prepared to be the subject of a Phase 1b dose finding study in the second half of 2025 as described below, subject to our ability to obtain additional financing.
- CLR 225, the alpha-emitting, actinium-225 based PRC has been observed to show activity in multiple solid tumor animal models, including pancreatic, colorectal, and breast cancer. The Company observed CLR 121225 to be well tolerated in these models with the animals showing no adverse events at the highest doses tested. The Company also observed that the compound has excellent biodistribution and uptake by the tumor. Furthermore, in multiple models of pancreatic adenocarcinoma, including highly refractory pancreatic cancer, we have observed the compound's proportional dose response with a single dose providing either tumor stasis at the lowest dose tested or tumor volume reduction at the higher doses. The Company is currently prepared to initiate a Phase 1 imaging and dose escalation safety study in the second half of 2025, subject to our ability to obtain additional financing.

Iopofosine, the beta-emitting PRC, utilizes iodine-131 and was studied in our CLOVER-WaM Phase 2 study of iopofosine in patients with relapsed/refractory (r/r) Waldenstrom's macroglobulinemia (WM) where it was observed to result in statistically significant outcomes on both primary and secondary endpoints, and our Phase 2b studies in r/r multiple myeloma (MM) patients and r/r central nervous system lymphoma (CNSL) are ongoing. The CLOVER-2 Phase 1a study for a variety of pediatric cancers has concluded and a Phase 1b study in pediatric patients with high grade glioma is enrolling. Additionally, a Phase 1 Investigator-initiated study conducted by the University of Wisconsin Madison of iopofosine in combination with external beam radiation in patients with recurrent head and neck cancer has also been completed. As with all clinical trials, adverse events, serious adverse events or fatalities may arise during a clinical trial resulting from medical problems that may not be related to clinical trial treatments. Furthermore, due to recent communications with the FDA regarding a confirmatory study to support accelerated approval and the regulatory submission for iopofosine, the Company is, in addition to determining the availability of funding for such a study, pursuing strategic options for the further development and commercialization of this product candidate. As part of our previous announcement to seek a full range of strategic alternatives, we have initiated a process that includes identifying a strategic partner with the resources to develop iopofosine I 131.

Clinical and Preclinical Pipeline

Preclinical Evaluations of CLR 125

In preclinical, *in vivo* evaluations of CLR 125, utilizing triple-negative breast cancer (TNBC) models, the compound was observed to have tumor uptake at a substantially higher rate than that of healthy tissue. Additionally, no signs of end-organ toxicity were observed, including hematological toxicity.

CLR 125 Proposed Study

The anticipated use of funds generated from this offering is to provide necessary capital for operating expenses and to initiate a Phase 1b clinical study in TNBC with CLR 125, which is chemically and structurally the same as iopofosine, with the only difference being the iodine isotope with which it is radiolabeled. The clinical experience of iopofosine informs the biodistribution of the compound and may instruct the potential potency and side effects of CLR 125, although given the different physical properties of the emissions from CLR 125, the Company believes that side effects could be less.

We expect the study to be a Phase 1b, randomized, open-label, multi-center study comparing the safety and efficacy of CLR 125 in patients with advanced TNBC who are relapsed/refractory (r/r) to at least one prior therapy. Three dose levels will be assessed in parallel, with enrollment of patients in a 1:1:1 manner. We expect that each arm will have a minimum of 15 evaluable patients. CLR 125 will be administered as a fractionated dose on Day 1 and Day 3 for cycle 1 and repeat approximately every 8-week for subsequent cycles. Depending on arm assignments, patients will receive between two and four cycles. An expansion arm may be evaluated of at least 15 patients following evaluation of the three dose levels by the data monitoring committee (DMC).

We anticipate a maximum of 75 patients to be enrolled in the trial. Safety and tolerability of CLR 125 will be assessed by physical examination, Eastern Cooperative Oncology Group (ECOG) performance status, vital signs, laboratory changes over time, ECGs, and adverse events of special interest. Efficacy of CLR 125 will be assessed by CT (or MRI if needed) examinations obtained at six-week intervals following the initial dose of CLR 125.

The study objective is to determine the Phase 2 dosing level with secondary endpoints including safety, tolerability, initial response assessment and distribution.

Preclinical Evaluations of CLR 225

In preclinical, *in vivo* evaluations of CLR 225, utilizing a pancreatic cancer model, the compound was observed to reduce tumor volume and improved survival benefit at four different dosing levels. Observed biodistribution exhibited substantial uptake in the tumor while remaining low in healthy tissue.

Clinical Studies in Iopofosine

The CLOVER-1 Phase 2 study of iopofosine, conducted in r/r B-cell malignancies, met the primary efficacy endpoints from the Part A dose-finding portion. The CLOVER-1 Phase 2b study, where iopofosine remains under further evaluation in highly refractory MM and CNSL patients, is closed to enrollment but ongoing with patients in follow-up. Fatalities have occurred in patients post-treatment with iopofosine.

The CLOVER-WaM study was designed as a pivotal registration study evaluating iopofosine in WM patients that were r/r to at least two prior lines of therapy including having failed or had a suboptimal response to a Bruton tyrosine kinase inhibitor (BTKi). The study completed enrollment in the fourth quarter of 2023, and initial top line data from the study was reported in January 2024. CLOVER-WaM was a single-arm study with a target enrollment of 50 patients. Based upon the data from September 2024, the CLOVER-WaM study enrolled a total of 55 patients in the modified Intent to Treat (mITT) population and met its primary endpoint with a major response rate (MRR) of 58.2% (95% confidence interval [44.50%, 75.80%, two-sided p value < 0.0001]) exceeding the FDA agreed-upon statistical hurdle of 20%. The overall response rate (ORR) in evaluable patients was 83.6%, and 98.2% of patients experienced disease control. Responses were durable, with median duration of response not reached with 11.4 months of follow-up and 76% of patients remaining progression free at a median follow-up of eight months. These outcomes exceed real world data, which demonstrate a 4-12% MRR and a duration of response of approximately six months or less despite continuous treatment in a patient population that is less pretreated and not refractory to multiple classes of drugs. Notably, iopofosine I 131 monotherapy achieved a 7.3% complete remission (CR) rate in this highly refractory WM population. Overall, 45 (69.2%) patients had prior exposure to at least 3 drug classes and 19 (29.2%) patients had prior exposure to at least 4 drug classes of anti-cancer therapies. Forty-eight (73.8%) patients had prior exposure to a BTKi of which 37 (77.1%) were deemed to be refractory to BTKis. Forty-three (66.2%) patients were exposed to BTKi and anti-CD20 antibody with 25 (58.1%) being refractory to both BTKi and anti-CD-20 antibodies. Thirty-seven (56.9%) patients had prior exposure to BTKi, anti-CD20 antibody, and chemotherapy and 18 (48.6%) patients were refractory to all three classes of drugs, BTKi, anti-CD20 antibody, and chemotherapy. Iopofosine I 131 was well tolerated and its toxicity profile was consistent with the Company's previously reported safety data. The safety population was 65 patients which was composed of patients that received at least a single dose of iopofosine I 131 but did not receive enough drug to be assessed for efficacy. There were 3 (4.6%) patients that experienced treatment-related adverse events (TRAEs) leading to discontinuation. The rates of greater TRAEs observed in more than 10% of patients included thrombocytopenia (56 [86.2%] patients), neutropenia (52 [80.0%] patients), anemia (42 [64.6%] patients) and decreased white blood cell count (21 [32.3%] patients) among hematologic toxicities and fatigue (22 [33.8%] patients), nausea (19 [29.2%] patients) and diarrhea (13 [20.0%] patients) among non-hematologic toxicities. The rates of Grade 3 or greater TRAEs observed in more than 10% of patients included thrombocytopenia (53 [81.5%] patients), neutropenia (43 [66.2%] patients), anemia (31 [47.7%] patients), decreased white blood cell count (18 [27.7%]), decreased lymphocyte count 8 (12.3%). All patients recovered from cytopenias with no reported aplastic sequelae. Importantly, there were no clinically significant bleeding events, and the rate of febrile neutropenia was 10.8%. There were no treatment-related deaths in the study.

The CLOVER-1 Phase 2 study met the primary efficacy endpoints from the Part A dose-finding portion, conducted in r/r B-cell malignancies, and is now enrolling an MM and CNSL expansion cohort (Phase 2b). The Phase 2b study will evaluate highly refractory MM patients in triple class, quad- and penta-drug refractory patients, including post-BCMA immunotherapy patients and r/r CNSL patients. The initial Investigational New Drug (IND) application was accepted by the FDA in March 2014 with multiple INDs submitted since that time. The Phase 1 study was designed to assess the compound's safety and tolerability in patients with r/r MM and to determine maximum tolerated dose (MTD) and was initiated in April 2015. The study completed enrollment, and the final clinical study report is expected in the first half of 2025. Initiated in March 2017, the primary goal of the Phase 2a study was to assess the compound's efficacy in a broad range of hematologic cancers.

The CLOVER-2 Phase 1a pediatric study an open-label, sequential-group, dose-escalation study was conducted internationally at seven leading pediatric cancer centers. The study was an open-label, sequential-group, dose-escalation study to evaluate the safety and tolerability of iopofosine in children and adolescents with relapsed or refractory cancers, including malignant brain tumors, neuroblastoma, sarcomas, and lymphomas (including Hodgkin's lymphoma). The maximum tolerated dose was determined to be greater than 60mCi/m2 administered as a fractionated dose. CLOVER-2 Phase 1b study is an open-label, international dose-finding study evaluating two different doses and dosing regimens of iopofosine in r/r pediatric patients with high grade gliomas. These cancer types were selected for clinical, regulatory and commercial rationales, including the radiosensitive nature and continued unmet medical need in the r/r setting, and the rare disease determinations made by the FDA based upon the current definition within the Orphan Drug Act. This study is partially funded (~\$2M) by a National Institutes of Health SBIR grant from the National Cancer Institute.

The U.S. Food and Drug Administration (FDA) granted iopofosine Fast Track Designation for lymphoplasmacytic lymphoma (LPL) and WM patients having received two or more prior treatment regimens, as well as r/r MM and r/r diffuse large B-cell lymphoma (DLBCL). Orphan Drug Designations (ODDs) have been granted for LPL/WM, MM, neuroblastoma, soft tissue sarcomas including rhabdomyosarcoma, Ewing's sarcoma and osteosarcoma. Iopofosine was also granted Rare Pediatric Disease Designation (RPDD) for the treatment of neuroblastoma, rhabdomyosarcoma, Ewing's sarcoma and osteosarcoma. The European Commission granted ODD to iopofosine for treatment of r/r MM and WM, as well as PRIME designation for WM.

Additionally, in June 2020, the European Medicines Agency (EMA) granted us Small and Medium-Sized Enterprise (SME) status by the EMA's Micro, Small and Medium-sized Enterprise office. SME status allows us to participate in significant financial incentives that include a 90% to 100% EMA fee reduction for scientific advice, clinical study protocol design, endpoints and statistical considerations, quality inspections of facilities and fee waivers for selective EMA pre-and post-authorization regulatory filings, including orphan drug and PRIME designations. We are also eligible to obtain EMA certification of quality and manufacturing data prior to a review of clinical data. Other financial incentives include EMA-provided translational services of all regulatory documents required for market authorization, further reducing the financial burden of the market authorization process.

Phase 3 Study in Patients with r/r Waldenstrom's macroglobulinemia

On March 6, 2025 the Company conducted its End-of-Phase-2 (EOP2) meeting with the U.S. Food and Drug Administration (FDA). As a result of the meeting, the Company believes that it understands the path forward for a one trial design for potential accelerated and full approval based upon a randomized Phase 3 trial assessing major response rate and progression free survival, respectively, as the primary endpoints in WM patients previously treated with a BTKi. The FDA and Cellectar agreed to utilize an Investigator Choice comparator approach, where investigators can select between one of two fixed duration treatments currently recommended by the NCCN guidelines. The initiation of this study is dependent on funding.

This meeting followed a November 2024 meeting where the FDA informed the Company that while the data from the CLOVER WaM study was meaningful, the FDA's preferred route to accelerated approval of iopofosine in WM was via a one trial design approach which would be in alignment with the recently issued accelerated approval guidance.

PDC Platform

We have leveraged our PDC platform to establish three ongoing collaborations featuring four unique payloads and mechanisms of action. Through research and development collaborations, our strategy is to generate near-term capital, supplement internal resources, gain access to novel molecules or payloads, accelerate product candidate development, and broaden our proprietary and partnered product pipelines.

Our PDC platform is designed to provide selective delivery of a diverse range of oncologic payloads to cancerous cells, whether a hematologic cancer or solid tumor; a primary tumor, or a metastatic tumor; and cancer stem cells. The PDC platform's mechanism of entry is designed not to rely upon a specific cell surface epitope or antigen as are required by other targeted delivery platforms but rather a unique change in the tumor cell membrane. Our PDC platform takes advantage of a metabolic pathway (beta oxidation) utilized by nearly all tumor cell types in all stages of the tumor cycle. Tumor cells modify the cell membrane to create specific, highly organized microdomains by which to transport lipids and long chain fatty acids into the cytoplasm, as a result of the utilization of this metabolic pathway. Our PDCs are designed to bind to these regions and directly enter the intracellular compartment. This mechanism allows the PDC molecules to accumulate in tumor cells over time, which we believe can enhance drug efficacy. The direct intracellular delivery allows our molecules to avoid the specialized, highly acidic cellular compartment known as lysosomes, which allows a PDC to deliver payloads that previously could not be delivered in this targeted manner. Additionally, molecules targeting specific cell surface epitopes face challenges in completely eliminating a tumor because the targeted antigens are limited in the total number presented on the cell surface, limiting total potential uptake and resulting in heterogenous uptake across the tumor, have longer cycling time from internalization to relocation on the cell surface, again diminishing their availability for binding, and are not present on all of the tumor cells because of the heterogenous nature of cancer cells, further increasing the unequal distribution of the drug across the tumor. This means a subpopulation of tumor cells always exists that cannot be addressed by therapies targeting specific surface epitopes. Additionally, the epitope utilized is also present on other normal tissue, resulting in off-target toxicities.

Beyond the benefits provided by the mechanism of entry, the PDC platform features include the capacity to link with almost any molecule, provide a significant increase in targeted oncologic payload delivery, a more uniform delivery, and the ability to target all types of tumor cells. As a result, we believe that we can create PDCs to treat a broad range of cancers with the potential to improve the therapeutic index of oncologic drug payloads, enhance or maintain efficacy while also reducing adverse events by minimizing drug delivery to healthy cells, and increasing delivery to cancerous cells and cancer stem cells.

We employ a drug discovery and development approach that allows us to efficiently design, research and advance drug candidates. Our iterative process allows us to rapidly and systematically produce multiple generations of incrementally improved targeted drug candidates without the expense of having to generate significant compound libraries.

CLOVER-1: Phase 2 Study in Select B-Cell Malignancies

The Phase 2 CLOVER-1 study was an open-label study designed to determine the efficacy and safety of CLR 131 in select B-cell malignancies (multiple myeloma (MM), indolent chronic lymphocytic leukemia (CLL)/small lymphocytic lymphoma (SLL), lymphoplasmacytic lymphoma (LPL)/Waldenstrom's macroglobulinemia (WM), marginal zone lymphoma (MZL), mantle cell lymphoma (MCL), DLBCL, and central nervous system lymphoma (CNSL) who have been previously treated with standard therapy for their underlying malignancy. As of March 2022, the study arms for CLL/SLL, LPL/WM, MZL, MCL, and DLBCL were closed. Dosing of patients varied by disease state cohort and was measured in terms of TBD.

In July 2016, we were awarded a \$2,000,000 National Cancer Institute (NCI) Fast-Track Small Business Innovation Research grant to further advance the clinical development of iopofosine. The funds supported the Phase 2 study initiated in March 2017 to define the clinical benefits of iopofosine in r/r MM and other niche hematologic malignancies with unmet clinical need. These niche hematologic malignancies include CLL, SLL, MZL, LPL/WM and DLBCL. The study was conducted in approximately 10 U.S. cancer centers in patients with orphan-designated relapse or refractory hematologic cancers. The planned study enrollment was up to 80 patients.

The study's primary endpoint was clinical benefit response (CBR), with secondary endpoints of ORR, PFS, time to next treatment (TtNT), median Overall Survival (mOS), DOR and other markers of efficacy following patients receiving one of three TBDs of iopofosine (<50mCi, ~50mCi and >60mCi), with the option for a second cycle approximately 75-180 days later. Dosages were provided either as a single bolus or fractionated (the assigned dose level split into two doses) given day 1 and day 15. Over the course of the study the dosing regimen of iopofosine advanced from a single bolus dose to two cycles of fractionated administrations of 15 mCi/m² per dose on days 1, 15 (cycle 1), and days 57, 71 (cycle 2). Adverse events occurring in at least 25% of subjects were fatigue (39%) and cytopenias, specifically, thrombocytopenia (75%), anemia (61%), neutropenia (54%), leukopenia (51%), and lymphopenia (25%). Serious adverse events occurring in greater than 5% of subjects were restricted to thrombocytopenia (9%) and febrile neutropenia (7.5%).

Phase 2a Study: Patients with r/r Waldenstrom's Macroglobulinemia Cohort

Patients in the r/r WM cohort all received TBD of ≥ 60 mCi (25 mCi/m2 single bolus, 31.25 mCi/m2 fractionated, 37.5 mCi/m2 fractionated, or two cycles of mCi/m2 fractionated) either as a bolus dose or fractionated. Current data from our Phase 2a CLOVER-1 clinical study show a 100% ORR in six WM patients and an 83.3% major response rate with one patient achieving a complete response (CR), which reached 39 months post-last treatment. While median treatment free survival (TFS), also known as treatment free remission (TFR), and DOR have not been reached, the average treatment TFS/TFR is currently at 330 days. We believe this may represent an important improvement in the treatment of r/r WM as we believe no approved or late-stage development treatments for second- and third-line patients have reported a CR to date. Based on study results, iopofosine was well tolerated, with the most common adverse events being cytopenias and fatigue.

Phase 2a Study: Patients with r/r Multiple Myeloma Cohort

In September 2020, we announced that a 40% ORR was observed in the subset of refractory MM patients deemed triple class refractory who received 60 mCi or greater TBD. Triple class refractory is defined as patients that are refractory to immunomodulatory, proteasome inhibitors and anti-CD38 antibody drug classes. The 40% ORR (6/15 patients) represents triple class refractory patients enrolled in Part A of Collectar's CLOVER-1 study and additional patients enrolled in Part B from March through May 2020 and received >60 mCi TBD (25 mCi/m2 single bolus, 31.25 mCi/m2 fractionated, 37.5 mCi/m2 fractionated, or two cycles of mCi/m2 fractionated) either as a bolus dose or fractionated. Patients with MM received 40 mg of dexamethasone concurrently beginning within 24 hours of the first CLR 131 infusion. All MM patients enrolled in the expansion cohort are required to be triple class refractory. The additional six patients enrolled in 2020 were heavily pre-treated with an average of nine prior multi-drug regimens. Three patients received a TBD of > 60 mCi and three received less than 60 mCi. Consistent with the data released in February 2020, patients receiving > 60 mCi typically exhibit greater responses. Based on study results to date, patients continue to tolerate iopofosine well, with the most common and almost exclusive treatment-emergent adverse events are cytopenias, such as thrombocytopenia, neutropenia, and anemia.

In December 2021, we presented data from 11 MM patients from our Phase 2 CLOVER-1 study in a poster at the American Society of Hematology (ASH) Annual Meeting and Exposition. The MM patients were at least triple class refractory (defined as refractory to an immunomodulatory agent, proteasome inhibitor and monoclonal antibody) with data current as of May 2021. Patients had a median of greater than 7 prior therapies with 50% classified as high risk. Initial results in these patients showed an ORR of 45.5%, a CBR of 72.7%, and a disease control rate (DCR) of 100%. Median PFS was 3.4 months. In a subset of five quad/penta drug refractory patients, efficacy increased, demonstrating an ORR of 80% and CBR of 100% in this highly treatment refractory group. The most commonly observed treatment emergent adverse events were cytopenias that included Grade 3 or 4 thrombocytopenia (62.5%), anemia (62.5%), neutropenia (62.5%) and decreased white blood cell count (50%). Treatment emergent adverse events were mostly limited to bone marrow suppression in line with prior observations. No patients experienced treatment emergent adverse events of neuropathy, arrhythmia, cardiovascular event, bleeding, ocular toxicities, renal function, alterations in liver enzymes, or infusion-site reactions or adverse events. We continue to enrich the r/r MM patient cohort with patients that are even more refractory, specifically enrolling patients that are quad-class refractory (triple class plus refractory to any of the recent approved product classes) and have relapsed post-BCMA immunotherapy. We reported in the Blood Cancer Journal in August 2022 that we observed iopofosine had a 50% ORR in patients receiving >60 mCi total administered dose (3/6 patients).

Phase 2a: Patients with r/r non-Hodgkin's Lymphoma Cohort

In February 2020, we announced positive data from our Phase 2a CLOVER-1 study in patients with NHL patients were treated with three different doses (<50mCi, ~50mCi and >60mCi TBD). Patients in the r/r NHL cohort received TBD of either ≥ 60 mCi or < 60 mCi (25 mCi/m2 single bolus, 31.25 mCi/m2 fractionated, 37.5 mCi/m2 fractionated, or two cycles of mCi/m2 fractionated) either as a bolus dose or fractionated. Patients with r/r NHL who received <60mCi TBD and the >60mCi TBD had a 42% and 43% ORR, respectively and a combined rate of 42%. These patients were also heavily pre-treated, having a median of three prior lines of treatment (range, 1 to 9) with the majority of patients being refractory to rituximab and/or ibrutinib. The patients had a median age of 70 with a range of 51 to 86. All patients had bone marrow involvement with an average of 23%. In addition to these findings, subtype assessments were completed in the r/r B-cell NHL patients. We observed a 30% ORR in patients with DLBCL, with one patient achieving a CR, which continues at nearly 24 months post-treatment. The ORR for CLL/SLL and MZL patients was 33%.

Based upon the dose response observed in the Phase 2a study for patients receiving TBDs of 60mCi or greater, we determined that patient dosing of iopofosine in the pivotal study would be >60mCi TBD. Therefore, patients are now grouped as receiving <60mCi or >60mCi TBD.

The most frequently reported adverse events in all patients were cytopenias, which followed a predictable course and timeline. The frequency of adverse events did not increase as doses were increased and the profile of cytopenias remained consistent. Importantly, our assessment is that these cytopenias have had a predictable pattern to initiation, nadir and recovery and are treatable. The most common grade ≥ 3 events at the highest dose (75mCi TBD) were hematologic toxicities including thrombocytopenia (65%), neutropenia (41%), leukopenia (30%), anemia (24%) and lymphopenia (35%). No patients experienced cardiotoxicities, neurological toxicities, infusion site reactions, peripheral neuropathy, allergic reactions, cytokine release syndrome, keratopathy, renal toxicities, or changes in liver enzymes. The safety and tolerability profile in patients with r/r NHL was similar to r/r MM patients except for fewer cytopenias of any grade. Based upon iopofosine being well tolerated across all dose groups, the observed response rate, and especially in difficult to treat patients such as high risk and triple class refractory or penta-refractory, and corroborating data showing the potential to further improve upon current ORRs and durability of those responses, the study has been expanded to test a two-cycle dosing optimization regimen with a target TBD >60 mCi/m2 of iopofosine.

In May 2020, we announced that the FDA granted Fast Track Designation for iopofosine in WM in patients having received two or more prior treatment regimens.

Phase 1 Study in Patients with r/r Multiple Myeloma

In February 2020, final results from a multicenter, Phase 1 dose escalation clinical trial of iopofosine in r/r MM were presented. The trial was designed to evaluate the safety and potential initial efficacy of iopofosine administered in an up to 30-minute I.V. infusion either as a single bolus dose or as a fractionated dose in heavily pretreated MM patients. The study enrolled a total of 26 evaluable patients at three trial sites. For the trial, which used a modified three-plus-three dose escalation design, 15 evaluable patients were dosed in single bolus doses from 12.5mCi/m2 up to 31.25mCi/m2 (TBD 20.35-59.17 mCi) and 11 evaluable patients were dosed in fractionated dosing cohorts of 31.25mCi/m2 to 40mCi/m2 (TBD 54.915-89.107 mCi). An iDMC did not identify dose-limiting toxicities in any cohort. Of the 26 evaluable patients in the trial, a partial response was observed in 4 of 26 patients (15.4%) and stable disease or minimal response in 22 of 26 patients (84.6%), for a disease control rate of 100%. A significant decrease in M-protein and free light chain (FLC) was also observed.

Iopofosine in combination with dexamethasone was under investigation in adult patients with r/r MM. MM is an incurable cancer of the plasma cells and is the second most common form of hematologic cancer. Patients had to be refractory to or relapsed from at least one proteasome inhibitor and at least one immunomodulatory agent. The clinical study was a standard three-plus-three dose escalation safety study to determine the maximum tolerable dose. We use the International Myeloma Working Group (IMWG) definitions of response, which involve monitoring the surrogate markers of efficacy, M protein and FLC. The IMWG defines a PR as a 50% or greater decrease in M protein or to 50% or greater decrease in FLC levels (for patients in whom M protein is unmeasurable). Secondary objectives included the evaluation of therapeutic activity by assessing surrogate efficacy markers, which include M protein, FLC, PFS and OS. All patients were heavily pretreated with an average of five prior lines of therapy. An iDMC assessed the safety of iopofosine up to its planned maximum single, bolus dose of 31.25 mCi/m² or a TBD of ~63 mCi. The four single dose cohorts examined were: 12.5 mCi/m² (~25mCi TBD), 18.75 mCi/m² (~37.5mCi TBD), 25 mCi/m² (~50mCi TBD), and 31.25 mCi/m² (~62.5mCi TBD), all in combination with low dose dexamethasone (40 mg weekly). Of the five patients in the first cohort, four were assessed as achieving stable disease and one patient progressed at Day 15 after administration and was taken off the study. Of the five patients admitted to the second cohort, all five were assessed as achieving stable disease; however, one patient progressed at Day 41 after administration and was taken off the study. Four patients were enrolled to the third cohort, and all were assessed as achieving stable disease. In September 2017, we announced safety and tolerability data for cohort 4, in which patients were treated with a single infusion up to 30-minutes of 31.25mCi/m² of iopofosine, which was tolerated by the three patients in the cohort. Additionally, all three patients experienced CBR with one patient achieving a partial response (PR). The patient experiencing a PR had an 82% reduction in FLC. This patient did not produce M protein, had received seven prior lines of treatment including radiation, stem cell transplantation and multiple triple combination treatments including one with daratumumab that was not tolerated. One patient experiencing stable disease attained a 44% reduction in M protein. In January 2019, we announced that the pooled mOS data from the first four cohorts was 22.0 months. In late 2018, we modified this study to evaluate a fractionated dosing strategy to potentially increase efficacy and decrease adverse events.

Cohorts five and six received fractionated dosing of 31.25 mCi/m²(~62.5mCi TBD) and 37.5 mCi/m² (~75mCi TBD), each administered on day 1 and day 8. Following the determination that all prior dosing cohorts were tolerated, we initiated a cohort seven utilizing a 40mCi/m² (~95mCi TBD) fractionated dose administered 20mCi/m² (~40mCi TBD) on days 1 and day 8. Cohort seven was the highest pre-planned dose cohort and subjects have completed the evaluation period. Adverse events occurring in at least 25% of subjects were fatigue (26%) and cytopenias, specifically, thrombocytopenia (90%), anemia (65%), neutropenia (55%), leukopenia (61%), and lymphopenia (58%). Serious adverse events occurring in greater than two subjects were restricted to febrile neutropenia n=3 (9.7%).

In May 2019, we announced that the FDA granted Fast Track Designation for iopofosine in fourth line or later r/r MM. Iopofosine is currently being evaluated in our ongoing CLOVER-1 Phase 2 clinical study in patients with r/r MM and other select B-cell lymphomas. Patients in the study received up to four, approximately 20-minute, IV infusions of iopofosine over 3 months, with doses given 14 days apart in each cycle and a maximum of two cycles. Low dose dexamethasone 40 mg weekly (20mg in patients ≥ 75), was provided for up to 12 weeks. The planned study enrollment was up to 80 patients. Its primary endpoint was clinical benefit rate (CBR), with additional endpoints of ORR, PFS, median overall survival (OS) and other markers of efficacy. Over the course of the study the dosing regimen of iopofosine advanced from a single bolus dose to two cycles of fractionated administrations of 15 mCi/m² per dose on days 1, 15 (cycle 1), and days 57, 71 (cycle 2). Following treatment with iopofosine, approximately 91% of patients experience a reduction in tumor marker with approximately 73% experiencing greater than 37% reduction.

CLOVER 2: Phase 1 Study in r/r Pediatric Patients with select Solid tumors, Lymphomas and Malignant Brain Tumors

In December 2017, the Division of Oncology at the FDA accepted our IND and study design for the Phase 1 study of iopofosine in children and adolescents with select rare and orphan designated cancers. This study was initiated during the first quarter of 2019. In December 2017, we submitted an IND application for r/r pediatric patients with select solid tumors, lymphomas and malignant brain tumors. The Phase 1 clinical study of iopofosine is an open-label, sequential-group, dose-escalation study evaluating the safety and tolerability of intravenous administration of iopofosine in children and adolescents with relapsed or refractory malignant solid tumors (neuroblastoma, Ewing's sarcoma, osteosarcoma, rhabdomyosarcoma) and lymphoma or recurrent or refractory malignant brain tumors for which there are no standard treatments. Secondary objectives of the study are to identify the recommended efficacious dose of iopofosine and to determine preliminary antitumor activity (treatment response) of iopofosine in children and adolescents. In 2018, the FDA granted ODD and RPDD for iopofosine for the treatment of neuroblastoma, rhabdomyosarcoma, Ewing's sarcoma and osteosarcoma.

In August 2020, based on data on four dose levels from 15mCi/m² up to 60mCi/m², the iDMC permitted the beginning of the evaluation of the next higher dose cohort, at 75mCi/m². The iDMC advised, based upon the initial data, to enrich the 60 mCi/m² dose level for patients over the age of 10 with HGG and Ewing sarcoma. Changes in various tumor parameters appeared to demonstrate initial response and tumor uptake. This includes patients with relapsed HGGs with over five months of PFS. In November 2020, we announced clinical data providing that iopofosine had been measured in pediatric brain tumors, confirming that systemic administration of iopofosine crosses the blood brain barrier and is delivered into tumors and that the data show disease control in heavily pretreated patients with ependymomas. In November 2021, we announced favorable data on changes in various tumor parameters in a Phase 1 study in children and adolescents with relapsed and refractory high-grade gliomas (HGGs) and soft tissue sarcomas. Pediatric HGGs are a collection of aggressive brain and central nervous system tumor subtypes (i.e. diffuse intrinsic pontine gliomas, glioblastomas, astrocytomas, ependymomas, etc.) with about 400 new pediatric cases diagnosed annually in the U.S. Children with these tumors have a poor prognosis and limited 5-year survival. Adverse events occurring in at least 25% of subjects were fatigue, headache, nausea and vomiting (28% respectively), and cytopenias, specifically, thrombocytopenia (67%), anemia (67%), neutropenia (61%), leukopenia (56%), and lymphopenia (33%). There were no serious adverse events occurring in more than 2 subjects. The part A portion of this Phase 1 study has concluded, and part B has initiated to determine the appropriate dosing regimen in pediatric patients with r/r HGG. In 2022, the NCI awarded Collectar a \$1,900,000 SBIR Phase 2 grant to explore iopofosine in pediatric HGG.

Phase 1 Study in r/r Head and Neck Cancer

In August 2016, the University of Wisconsin Carbone Cancer Center (UWCCC) was awarded a five-year Specialized Programs of Research Excellence (SPORE) grant of \$12,000,000 from the NCI and the National Institute of Dental and Craniofacial Research to improve treatments and outcomes for head and neck cancer (HNC) patients. HNC is the sixth most common cancer across the world with approximately 56,000 new patients diagnosed every year in the U.S. As a key component of this grant, the UWCCC researchers completed testing of iopofosine in various animal HNC models and initiated the first human clinical study enrolling up to 30 patients combining iopofosine and external beam radiation treatment (EBRT) with recurrent HNC in the fourth quarter of 2019. UWCCC has completed the part A portion of a safety and tolerability study of iopofosine in combination with EBRT and preliminary data suggest safety and tolerability in relapsed or refractory HNC. The reduction in the amount or fractions (doses) of EBRT has the potential to diminish the (number and severity of) adverse events associated with EBRT. Patients with HNC typically receive approximately 60-70 Grays (Gy) of EBRT given as 2 – 3 Gy daily doses over a six-week timeframe. Patients can experience long-term tumor control following re-irradiation in this setting; however, this approach can cause severe injury to normal tissue structures, significant adverse events and diminished quality of life. Part B of the study was to assess the safety and potential benefits of iopofosine in combination with EBRT in a cohort of up to 24 patients. This portion of the study has fully enrolled, and data were reported at the ASTRO 2024 conference on March 2, 2024. Complete remission was achieved in 64% of patients, with an ORR of 73% (n=11). Prior to treatment with iopofosine I 131, six patients had multiple recurrences, and one had metastatic disease, both of which are indicative of poor outcomes. Additionally, in the study we observed durability of tumor control with an overall survival of 73% and progression free survival of 36% at 12 months. Eleven patients (92%) experienced a treatment-related adverse event. Treatment-related adverse events of grade 3 or higher occurring in 20% or more patients were thrombocytopenia (75%), lymphopenia (75%), leukopenia (75%), neutropenia (67%), and anemia (42%). Observed adverse events were consistent with the known toxicity profile of iopofosine I 131, with cytopenias being the most common. All patients recovered. We believe that these data support the notion of enhanced patient outcomes when combining the use of iopofosine I 131 in combination with external beam radiation for a treatment of solid tumors.

Additional Pipeline Candidates

We believe our PDC platform has potential to provide targeted delivery of a diverse range of oncologic payloads, as exemplified by our lead product candidates discussed above. Additional pipeline product candidates, listed below, may also result in improvements to the current standard of care (SOC) for the treatment of a broad range of human cancers:

- The company has developed a series of proprietary small molecule phospholipid drug conjugates. These programs employ either novel payload or novel linkers. Many of these molecules have demonstrated efficacy and tolerability in preclinical mouse models. The collaboration with IntoCell Inc. successfully met its agreed upon endpoint. The collaboration provided significant data which has led Collectar to select a series of highly potent cytotoxic small molecule payloads for further development.
- In collaboration with other parties, Collectar has also validated that the PLE is capable of delivering peptide payloads and oligonucleotide (siRNA, mRNA, etc.) payloads to the tumors when delivered systemically. These molecules have also been shown to demonstrate activity and safety in multiple preclinical mouse models. Based upon these collaborations and the data, the company has initiated internal proprietary programs with each of these treatment modalities. We are also evaluating other alpha-emitting isotopes such as astatine-211 and lead-212 in preclinical studies.

Recent Developments

Breakthrough Designation

On June 4, 2025, we announced that the FDA has granted Breakthrough Therapy Designation for iopofosine I 131, as a radioconjugate monotherapy for the treatment of relapsed/refractory Waldenstrom macroglobulinemia (r/r WM).

Warrant Inducement

On June 5, 2025, we entered into inducement offer letter agreements with certain holders (the “Holders”) of certain of our (i) Common Stock Purchase Warrants to purchase shares of Common Stock, issued on June 5, 2020 (the “2020 Warrants”), (ii) Common Stock Purchase Warrants to purchase shares of Common Stock, issued on October 25, 2022 (the “2022 Warrants”), and (iii) Common Stock Purchase Warrants to purchase shares of Common Stock, issued on July 21, 2024 (the “2024 Warrants” and together with the 2020 Warrants and the 2022 Warrants, the “Existing Warrant(s)”) (the “Warrant Inducement”). Pursuant to the Warrant Inducement, the Holders agreed to exercise the Existing Warrants for cash at a reduced exercise price of \$0.3041 per share (on a pre-Reverse Stock Split basis) in consideration for exercising in full for cash all of the Existing Warrants held by the Holders at the reduced exercise price on or before 9:00 a.m. Eastern Time on June 5, 2025. The Warrant Inducement provided for the immediate exercise of certain outstanding Existing Warrants to purchase an aggregate of 8,281,322 shares of common stock (on a pre-Reverse Stock Split basis).

The shares of common stock underlying the Existing Warrants have either been registered pursuant to the registration statement on Form S-1 filed with the SEC on May 8, 2020, as amended (File No. 333-238132), or registered for resale pursuant to either the registration statement on Form S-1 filed with the SEC on November 23, 2022 (File No. 333-268544) or the registration statement on Form S-1 filed with the SEC on January 29, 2025 (File No. 333-284580).

Reverse Stock Split

At 12:01 a.m. Eastern Time on Tuesday, June 24, 2025 (the “Effective Time”), our Reverse Stock Split became effective.

In connection with the Reverse Stock Split, every 30 shares of our common stock issued and outstanding as of the Effective Time was automatically converted into one share of our common stock. Stockholders who otherwise held a fractional share of common stock will receive a cash payment in lieu of such fractional share. On the Effective Time, our shares of common stock issued and outstanding were reduced from 54,361,197 to approximately 1,812,039 shares of common stock issued and outstanding. Our shares of common stock commenced trading on a split-adjusted basis when the Nasdaq Capital Market opened on June 24, 2025, and will continue to trade under its existing symbol “CLRB.” The new CUSIP number for the common stock following the Reverse Stock Split is 15117F880.

As a result of the Reverse Stock Split, the number of shares of common stock available for issuance under our equity incentive plans were proportionately affected. Additionally, under the terms of our outstanding stock options and warrants, when the Reverse Stock Split became effective, the number of shares of our common stock covered by each of them were divided by the number of shares being combined into one share of our common stock in the Reverse Stock Split and the exercise or conversion price per share was increased to a dollar amount equal to the current exercise or conversion price, multiplied by the number of shares being combined into one share of our common stock in the Reverse Stock Split. This resulted in the same aggregate price being required to be paid upon exercise as was required immediately preceding the Reverse Stock Split. Furthermore, the conversion ratio of our outstanding preferred stock was also adjusted proportionately.

Our periodic and current reports that are incorporated by reference, and all other documents that were filed prior to June 24, 2025, do not give effect to the Reverse Stock Split. The following selected “previously reported” information has been derived from our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2024, filed with the SEC on March 13, 2025, and our unaudited financial statements included in our Quarterly Report on Form 10-Q for the period ended March 31, 2025, filed with the SEC on May 13, 2025. The “post Reverse Split” information below recasts the “previously reported” share and per share information to reflect the June 24, 2025 one-for-thirty Reverse Stock Split, discussed elsewhere in the registration statement.

	Twelve Months Ended December 31, 2024	2023	Three Months Ended March 31, 2025	2024
Weighted-average common shares outstanding, basic - previously reported	36,622,474	12,221,571	46,079,875	29,346,679
Weighted-average common shares outstanding, diluted - previously reported	37,143,769	12,221,571	46,079,875	29,346,679
Weighted-average common shares outstanding, basic - post-Reverse Split	1,220,749	407,386	1,535,996	978,223
Weighted-average common shares outstanding, diluted - post-Reverse Split	1,238,126	407,386	1,535,996	978,223
Net loss per share, basic - previously reported	\$ (1.22)	\$ (3.50)	\$ (0.14)	\$ (0.91)
Net loss per share, diluted - previously reported	\$ (1.40)	\$ (3.50)	\$ (0.14)	\$ (0.91)
Net loss per share, basic - post-Reverse Split	\$ (36.52)	\$ (104.99)	\$ (4.20)	\$ (27.30)
Net loss per share, diluted - post-Reverse Split	\$ (41.89)	\$ (104.99)	\$ (4.20)	\$ (27.30)
	As of Dec 31, 2024	As of Dec 31, 2023	As of Mar 31, 2025	
Common stock - previously reported	\$ 461	\$ 207	\$ 461	
Additional paid-in capital - previously reported	\$ 261,115,905	\$ 182,924,210	\$ 261,678,642	
Common stock issued and outstanding - previously reported	46,079,875	20,744,110	46,079,875	
Common stock - post-Reverse Split	\$ 15	\$ 7	\$ 15	
Additional paid-in capital - post-Reverse Split	\$ 261,116,351	\$ 182,924,410	\$ 261,679,088	
Common stock issued and outstanding - post-Reverse Split	1,535,996	691,470	1,535,996	

Submission of First-in-Humans Phase 1 Clinical Trial Protocol to US Food and Drug Administration for CLR 125 to Treat Triple-Negative Breast Cancer

On June 24, 2025, we submitted a protocol with the U.S. Food and Drug Administration (FDA) for a Phase 1 study of our Auger emitting radiopharmaceutical, CLR 125, for the treatment of relapsed triple-negative breast cancer (TNBC).

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” and accordingly have elected to take advance of certain of the reduced disclosure obligations in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

Corporate Information

Our principal executive offices are located at 100 Campus Drive, Florham Park, New Jersey 07932 and the telephone number of our principal executive offices is (608) 441-8120. We maintain a website at www.cellectar.com. The information included or referred to on, or accessible through, our website does not constitute part of, and is not incorporated by reference into, this prospectus.

THE OFFERING

Class A Units we are offering	Up to 755,667 Class A Units with each Class A Unit consisting of (i) one (1) share of our common stock and (ii) one (1) Common Warrant.
Class B Units we are offering	<p>Up to 755,667 Class B Units with each Class B Unit consisting of (i) one (1) Pre-Funded Warrant and (ii) one (1) Common Warrant. In the event that certain purchasers whose purchase of shares of common stock in the Class A Units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the closing of this offering, such purchasers will have the opportunity to purchase, if such purchasers so choose, Class B Units, in lieu of the Class A Units that would otherwise result in any such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock. Each Pre-Funded Warrant is exercisable for one share of our common stock. The exercise price of each Pre-Funded Warrant is \$0.00001 per share. The Pre-Funded Warrants are exercisable immediately and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of any Pre-Funded Warrants sold in this offering. For each Class B Unit that we sell, the number of Class A Units that we are offering will be reduced on a one-for-one basis.</p> <p>To better understand the terms of the Pre-Funded Warrants, you should carefully read the "Description of Securities We Are Offering" section of this prospectus. You should also read the form of Pre-Funded Warrant, which is filed as an exhibit to the registration statement that includes this prospectus.</p>
Public offering price	We have assumed a public offering price of \$7.94 per Class A Unit, which represents the last reported sale price of our common stock as reported on the Nasdaq Capital Market on June 25, 2025. The Class B Units will be sold at the same price as the Class A Units minus \$0.00001 per Class B Unit (which is the exercise price of the Pre-Funded Warrant contained in the Class B Unit). The final public offering price will be determined through negotiation between us and the underwriters in the offering and may be at a discount to the current market price. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price.
Common Warrants	<p>Each Class A Unit and Class B Unit purchased in this offering, as the case may be, will include one (1) Common Warrant to purchase one (1) share of common stock at an exercise price of \$ per share, subject to adjustment in the event of stock dividends, stock splits, stock combinations, reclassifications, reorganizations, or similar events affecting our common stock, will be immediately exercisable upon issuance and will expire five (5) years from the date of issuance. The shares of common stock in the Class A Units or the Pre-Funded Warrants in the Class B Units, as applicable, and the accompanying Common Warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance. This offering also relates to the offering of the shares of common stock issuable upon exercise of the Common Warrants. Each Common Warrant is exercisable for one (1) share of common stock.</p> <p>To better understand the terms of the Common Warrants, you should carefully read the "Description of Securities We Are Offering" section of this prospectus. You should also read the form of Common Warrant, which is filed as an exhibit to the registration statement that includes this prospectus.</p>
Over-allotment option	The underwriters have the option to purchase an aggregate of 113,350 additional shares of common stock and/or additional Common Warrants to purchase up to 113,350 shares of common stock solely to cover over-allotments, if any, at the price to the public less the underwriting discounts and commissions. The over-allotment option may be used to purchase shares of common stock and/or Common Warrants in any combination as determined by the underwriters. The over-allotment option is exercisable for forty-five (45) days from the date of this prospectus.

Common stock outstanding immediately before this offering	1,812,039 shares of common stock.
Common stock outstanding immediately after this offering	2,567,706 shares of common stock, or 2,681,056 shares if the underwriters exercise the over-allotment option in full, and assuming no sale of any Class B Units and assuming none of the Common Warrants or representative warrants issued in this offering are exercised.
Use of proceeds	We estimate that we will receive net proceeds of approximately \$5.0 million from the sale of the securities offered by us in this offering, based on the assumed public offering price of \$7.94 per Class A Unit (the last reported sale price of our common stock on the Nasdaq Capital Market on June 25, 2025), assuming no sales of Class B Units, which, if sold, would reduce the number of Class A Units that we are offering on a one-for-one basis, and after deducting the underwriting commission and estimated offering expenses payable by us. We intend to use the net proceeds from this offering for general corporate purposes, including working capital and operating expenses, and to initiate a Phase 1b clinical study of our compound CLR 121125 (CLR 125) in triple-negative breast cancer. See “ <i>Use of Proceeds</i> ” for additional information.
Lock-Up Agreements	We, and each of our officers and directors are subject to certain lock-up restrictions as set forth in more detail in the “ <i>Underwriting</i> ” section.
Nasdaq Symbol	Our common stock is listed on The Nasdaq Capital Market under the symbol “CLRB.” There is no established trading market for the Pre-Funded Warrants or the Common Warrants and we do not expect such markets to develop. In addition, we do not intend to apply for the listing of the Pre-Funded Warrants or Common Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the Pre-Funded Warrants and Common Warrants will be limited.
Risk Factors	An investment in our securities involves a high degree of risk. See “ <i>Risk Factors</i> ” beginning on page 17 of this prospectus and the other information included and incorporated by reference in this prospectus for a discussion of the risk factors you should carefully consider before deciding to invest in our securities.

Unless otherwise indicated, all information in this prospectus assumes no exercise of outstanding options or warrants.

Unless otherwise indicated, all information contained in this prospectus assumes no sale of Pre-Funded Warrants, which, if sold, would reduce the number of shares of common stock that we are offering on a one-for-one basis and no exercise of any Common Warrants or representative warrants issued in this offering.

Unless otherwise indicated, the number of shares of common stock to be outstanding immediately after this offering is based on 1,535,996 shares of common stock outstanding as of March 31, 2025, which is adjusted to 1,812,039 to give effect to 276,043 shares that were issued pursuant to the Warrant Inducement, and which excludes:

- any shares of common stock issuable upon the exercise of the Underwriters' over-allotment option;
- any shares of common stock issuable upon the exercise of Pre-Funded Warrants issued in this offering;
- any shares of common stock issuable upon the exercise of Common Warrants issued in this offering;
- any shares of common stock issuable upon the exercise of the representative warrants issued as compensation to the representative of the underwriters in this offering;
- an aggregate of 211,816 shares of common stock issuable upon the exercise of outstanding stock options issued to employees, directors and consultants;
- an aggregate of 13,040 shares of common stock issuable upon the conversion of outstanding shares of Series E-2 preferred stock;
- an aggregate of 3,704 shares of common stock issuable upon the conversion of outstanding shares of Series D preferred stock; and
- an aggregate of 522,011 additional shares of common stock reserved for issuance under outstanding warrants having expiration dates between June 2025 and July 2029, and exercise prices ranging from \$58.80 to \$362.250 per share.

Summary Risk Factors

Investing in our securities involves a high degree of risk. You should carefully consider all of the risks discussed in the section entitled “Risk Factors,” not just those discussed under this “Summary of Risk Factors” before making a decision to invest in our securities. The following is a list of some of these risks:

Risks Related to This Offering

- The net proceeds from this offering, together with our existing cash and cash equivalents, will not be sufficient to progress CLR 125 through a Phase 1b dose finding study data readout and we will require additional funding to do so. If no additional sources of funding materialize, the Company may be required to seek other alternatives which may include, among others, the sale of assets, discontinuance of certain operations, a wind-down of operations and/or filing for bankruptcy protection.
- Management will have broad discretion as to the use of the proceeds from this offering, if any, and may not use the proceeds effectively.
- If we do not maintain a current and effective prospectus relating to the common stock issuable upon exercise of the Common Warrants, public holders will only be able to exercise such Common Warrants on a “cashless basis.”
- If you purchase our common stock, Pre-Funded Warrants and Common Warrants in this offering, you will incur immediate and substantial dilution in the book value of your shares.
- Significant holders or beneficial holders of our common stock may not be permitted to exercise Pre-Funded Warrants or Common Warrants that they hold.
- The Common Warrants are speculative in nature.
- We may be required to repurchase the Common Warrants, which may prevent or deter a third party from acquiring us.
- An investment in the Pre-Funded Warrants, Common Warrants and our common stock has numerous tax consequences.
- Our stock price has experienced, and may continue to experience, price fluctuations.
- Future sales of a significant number of our shares of common stock in the public markets, or the perception that such sales could occur, could depress the market price of our shares of common stock.
- There is no public market for the Common Warrants or Pre-Funded Warrants being offered in this offering.
- Holders of our Common Warrants and Pre-Funded Warrants will have no rights as a common stockholder until they acquire our common stock.
- We have never paid dividends and we do not anticipate paying dividends in the future.
- A significant number of shares of our common stock are issuable pursuant to outstanding stock awards, and we expect to issue additional stock awards and shares of common stock in the future. Exercise of these awards and sales of shares will dilute the interests of existing security holders and may depress the price of our common stock.
- You may experience future dilution as a result of future equity offerings.
- Failure to meet Nasdaq’s continued listing requirements could result in the delisting of our common stock, negatively impact the price of our common stock and negatively impact our ability to raise additional capital.
- If our business plans are not successful, we may not be able to continue operations as a going concern and investors in this offering may lose their entire investment in us.

Risks Related to Capital and Our Operations

- If the Company’s exploration of strategic alternatives is unsuccessful, its financial condition and results of operations may be materially adversely affected.
- We will require additional capital in order to continue our operations and may have difficulty raising additional capital.
- Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

Risks Related to Manufacturing and Supply

- We rely on a collaborative outsourced business model, and disruptions with our third-party collaborators may impede our ability to gain FDA approval and delay or impair commercialization of any products.

Risks Related to Research and Development and the FDA

- We cannot assure the successful development and commercialization of our compounds in development.
- Failure to complete the development of our technologies, obtain government approvals, including required FDA approvals, or comply with ongoing governmental regulations could prevent, delay or limit introduction or sale of proposed products and result in failure to achieve revenues or maintain our ongoing business.
- Fast track designation by the FDA may not actually lead to a faster development or regulatory review or approval process and does not assure FDA approval of our product candidates.
- The FDA has granted rare pediatric disease designation, RPDD, to iopofosine for treatment of neuroblastoma, rhabdomyosarcoma, Ewing’s sarcoma and osteosarcoma; however, we may not be able to realize any value from such designation.
- Clinical studies involve a lengthy and expensive process with an uncertain outcome, and results of earlier studies may not be predictive of future study results.
- We may be required to suspend or discontinue clinical studies because of unexpected side effects or other safety risks that could preclude approval of our product candidates.
- The biopharmaceutical industry is subject to extensive regulatory obligations and policies that are subject to change, including due to judicial challenges.

Risks Related to Legal Compliance and Litigation

- Controls we or our third-party collaborators have in place to ensure compliance with all applicable laws and regulations may not be effective.
- We are exposed to product, clinical and preclinical liability risks that could create a substantial financial burden should we be sued.

Risks Related to Intellectual Property

- We expect to rely on our patents as well as specialized regulatory designations such as orphan drug classification for our product candidates, but regulatory drug designations may not confer marketing exclusivity or other expected commercial benefits.
- If we are unable to adequately protect or enforce our rights to intellectual property or to secure rights to third-party patents, we may lose valuable rights, experience reduced market share, assuming any, or incur costly litigation to protect our intellectual property rights.

Risks Related to Our Employees

- We rely on a small number of key personnel who may terminate their employment with us at any time, and our success will depend on our ability to hire additional qualified personnel.
- Confidentiality agreements with employees and others may not adequately prevent disclosure of our trade secrets and other proprietary information and may not adequately protect our intellectual property, which could limit our ability to compete.

Risks Related to Commercialization of our Products

- Acceptance of our products in the marketplace is uncertain and failure to achieve market acceptance will prevent or delay our ability to generate revenues.
- Regulatory approval for any approved product is limited by the FDA, the European Commission, and other regulators, to those specific indications and conditions for which clinical safety and efficacy have been demonstrated, and we may incur significant liability if it is determined that we are promoting the “off-label” use of any of our future product candidates if approved.

Risks Related to Internal Controls

- We identified certain misstatements to our previously issued financial statements and have restated the financial statements described below, which has exposed us to additional risks and uncertainties.
- We identified material weaknesses in our internal control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain effective internal control over financial reporting, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect our business and share price.

Risks Related to Our Equity Securities

- Our common stock could be further diluted as the result of the issuance of additional shares of common stock, convertible securities, warrants or options.
- Provisions of our certificate of incorporation, by-laws, and Delaware law may make an acquisition of us or a change in our management more difficult.

General Risk Factors

- Our business and operations may be materially adversely affected in the event of computer system failures or security breaches.

RISK FACTORS

An investment in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, prospective investors should consider carefully all of the information included and incorporated by reference or deemed to be incorporated by reference in this prospectus, including the risk factors incorporated by reference herein from our [Annual Report on Form 10-K for the fiscal year ended December 31, 2024](#) and our [Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2025](#), as updated by annual, quarterly and other reports and documents we file with the SEC after the date of this prospectus and that are incorporated by reference herein. Each of these risk factors could have a material adverse effect on our business, results of operations, financial position or cash flows, which may result in the loss of all or part of your investment. For more information, see “Where You Can Find Additional Information” and “Incorporation of Documents by Reference.”

The risks described in these documents are not the only ones we face. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Further, past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. Please also read carefully the section below entitled “Forward-Looking Statements.”

Risks Related to This Offering

The net proceeds from this offering, together with our existing cash and cash equivalents, will not be sufficient to progress CLR 125 through a Phase 1b dose finding study data readout and we will require additional funding to do so. If no additional sources of funding materialize, the Company may be required to seek other alternatives which may include, among others, the sale of assets, discontinuance of certain operations, a wind-down of operations and/or filing for bankruptcy protection.

Our intended use of net proceeds from this offering will be for general corporate purposes, including working capital and operating expenses and to initiate a Phase 1b dose finding study for CLR 121125 in triple-negative breast cancer. However, we do not expect that our net use of proceeds from this offering, together with our existing cash and cash equivalents, will be sufficient to progress this study through a preliminary data readout. As such, our ability to progress through a preliminary data readout and our current operating plan will continue to depend on our ability to obtain additional funding from the sale of equity and/or debt securities, strategic transaction or other sources of capital.

Our ability to obtain additional funding on acceptable terms or at all is subject to a variety of risks and uncertainties outside of our control. Those risks and uncertainties are further exacerbated since the Company is not expected to have any readouts of its data from the Phase 1b dose finding study of CLR 121125 in close proximity to the time when it may need to seek additional funding.

The Company plans to continue actively pursuing additional funding, however, there can be no assurance that such additional funding will materialize. If no additional sources of funding materialize, the Company may be required to seek other alternatives which may include, among others, the sale of assets, discontinuance of certain operations, a wind-down of operations and/or filing for bankruptcy protection.

Management will have broad discretion as to the use of the proceeds from this offering, if any, and may not use the proceeds effectively.

We currently anticipate that any net proceeds from this offering will be used for general corporate purposes, including working capital and operating expenses, and to initiate a Phase 1b clinical study of our compound CLR 125 in triple-negative breast cancer. However, we have not determined the specific allocation of the net proceeds from this offering, if any, among these potential uses. Our management will have broad discretion as to the application of the net proceeds from this offering, if any, and could use them for purposes other than those contemplated at the time of the offering. Our management may use the net proceeds for corporate purposes that may not improve our financial condition or market value.

If we do not maintain a current and effective prospectus relating to the common stock issuable upon exercise of the Common Warrants, public holders will only be able to exercise such Common Warrants on a “cashless basis.”

If we do not maintain a current and effective prospectus relating to the shares of common stock issuable upon exercise of the Common Warrants at the time that holders wish to exercise such respective warrants, they will only be able to exercise them on a “cashless basis,” and under no circumstances would we be required to make any cash payments or net cash settle such warrants to the holders. As a result, the number of shares of common stock that holders will receive upon exercise of the Common Warrants will be fewer than it would have been had such holders exercised their Common Warrants for cash. We will use our best efforts to maintain a current and effective prospectus relating to the shares of common stock issuable upon exercise of such Common Warrants until the expiration of such Common Warrants or until all Common Warrants have been exercised in full. However, we cannot assure you that we will be able to do so. If we are unable to do so, the potential “upside” of the holder’s investment in our Company may be reduced.

If you purchase our common stock, Pre-Funded Warrants and Common Warrants in this offering, you will incur immediate and substantial dilution in the book value of your shares.

The public offering price in this offering is substantially higher than the net tangible book value per share of our common stock. Investors purchasing common stock and Common Warrants in this offering will pay a price per share that substantially exceeds the book value of our tangible assets after subtracting our liabilities. As a result, investors purchasing common stock and Common Warrants in this offering will incur immediate dilution of \$2.10 per share, based on the assumed public offering price of \$7.94 per Class A Unit.

As a result of the dilution to investors purchasing securities in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. For a further description of the dilution that you will incur as a result of purchasing securities in this offering, see “Dilution.”

Significant holders or beneficial holders of our common stock may not be permitted to exercise Pre-Funded Warrants or Common Warrants that they hold.

The Pre-Funded Warrants and Common Warrants being offered hereby will prohibit a holder from exercising its Pre-Funded Warrants or Common Warrants if doing so would result in such holder (together with such holder’s affiliates and any other persons acting as a group together with such holder or any of such holder’s affiliates) beneficially owning more than 4.99% of our common stock outstanding immediately after giving effect to the exercise, provided that, at the election of a holder and notice to us, such beneficial ownership limitation as to such holder shall be 9.99% of our common stock outstanding immediately after giving effect to the exercise. As a result, if you hold a significant amount of our securities, you may not be able to exercise your Pre-Funded Warrants or Common Warrants for shares of our common stock, in whole or in part, at a time when it would be financially beneficial for you to do so.

The Common Warrants are speculative in nature.

The Common Warrants offered hereby 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 common stock at a fixed price. Specifically, commencing on the date of issuance, holders of the Common Warrants may acquire the common stock issuable upon exercise of such Common Warrants at an exercise price of \$ per share of common stock. Moreover, following this offering, the market value of the Common Warrants will be uncertain and there can be no assurance that the market value of the Common Warrants will equal or exceed the exercise price of the Common Warrants, and consequently, whether it will ever be profitable for holders of the Common Warrants to exercise the Common Warrants.

An investment in the Pre-Funded Warrants, Common Warrants and our common stock has numerous tax consequences.

There are numerous tax consequences to investors as a result of their investment in the Company. We encourage investors to seek advice from competent tax advisors as to the consequences of an investment in our Pre-Funded Warrants, Common Warrants and common stock. See “Material U.S. Federal Income Tax Considerations.”

Our stock price has experienced, and may continue to experience, price fluctuations.

Our stock price has been and continues to be highly volatile. There can be no assurance that the market price for our common stock will remain at its current level, and a decrease in the market price could result in substantial losses for investors. The market price of our common stock may be significantly affected by one or more of the following factors:

- announcements or press releases relating to the biopharmaceutical sector or to our own business or prospects;
- regulatory, legislative or other developments affecting us or the healthcare industry generally;
- sales by holders of restricted securities pursuant to effective registration statements or exemptions from registration;
- market conditions specific to biopharmaceutical companies, the healthcare industry and the stock market generally; and
- our ability to meet the continued listing standards of the Nasdaq Capital Market (“Nasdaq”) exchange.

Future sales of a significant number of our shares of common stock in the public markets, or the perception that such sales could occur, could depress the market price of our shares of common stock.

Sales of a substantial number of our shares of common stock in the public markets, or the perception that such sales could occur, including from the exercise of outstanding warrants or sales of common stock issuable thereunder, could depress the market price of our shares of common stock and impair our ability to raise capital through the sale of additional equity securities. A substantial number of shares of common stock are being offered by this prospectus. We cannot predict the number of these shares that might be sold nor the effect that future sales of our shares of common stock, including shares issuable upon the exercise of outstanding warrants, would have on the market price of our shares of common stock.

There is no public market for the Common Warrants or Pre-Funded Warrants being offered in this offering.

There is no established public trading market for the Common Warrants or Pre-Funded Warrants being offered in this offering, and we do not expect such markets to develop. In addition, we do not intend to apply to list the Common Warrants or Pre-Funded Warrants on any securities exchange or nationally recognized trading system, including The Nasdaq Stock Market. Without an active market, the liquidity of the Common Warrants and Pre-Funded Warrants will be limited.

Holders of our Common Warrants and Pre-Funded Warrants will have no rights as a common stockholder until they acquire our common stock.

Until holders of our Common Warrants and Pre-Funded Warrants acquire shares of our common stock upon exercise of the Common Warrants and Pre-Funded Warrants, the holders will have no rights with respect to shares of our common stock issuable upon exercise of the Common Warrants and Pre-Funded Warrants. Upon exercise of the Common Warrants and Pre-Funded Warrants, 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.

We have never paid dividends and we do not anticipate paying dividends in the future.

We have never paid dividends on our capital stock and do not anticipate paying any dividends for the foreseeable future. We anticipate that the Company will retain its earnings, if any, for future growth. Investors seeking cash dividends should not invest in the Company's common stock for that purpose.

A significant number of shares of our common stock are issuable pursuant to outstanding stock awards, and we expect to issue additional stock awards and shares of common stock in the future. Exercise of these awards and sales of shares will dilute the interests of existing security holders and may depress the price of our common stock.

As of June 24, 2025, there were approximately 1,812,039 shares of common stock outstanding, as well as outstanding awards to purchase approximately 211,816 shares of common stock under various incentive stock plans of the Company. Additionally, as of June 24, 2025, there were approximately 98,909 shares of common stock available for future issuance under various incentive plans. We may issue additional common stock, warrants and other convertible securities from time to time to finance our operations. We may also issue additional shares to fund potential acquisitions or in connection with additional stock options or other equity awards granted to our employees, officers, directors and consultants under our various incentive plans. The issuance of additional shares of common stock, warrants or other convertible securities and the perception that such issuances may occur or exercise of outstanding warrants or options may have a dilutive impact on other stockholders and could have a material negative effect on the market price of our common stock.

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 shares of our 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 paid by any investor 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 any investor in this offering, and investors purchasing shares or other securities in the future could have rights superior to you. 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 any investor in this offering.

Failure to meet Nasdaq's continued listing requirements could result in the delisting of our common stock, negatively impact the price of our common stock and negatively impact our ability to raise additional capital.

We must continue to satisfy Nasdaq continued listing requirements, including, among other things, certain corporate governance requirements, minimum stockholders' equity of \$2.5 million, and a minimum closing bid price requirement of \$1.00 per share. If a company fails for 30 consecutive business days to meet the \$1.00 minimum closing bid price requirement, Nasdaq will send a deficiency notice to the company, advising that it has been afforded a "compliance period" of 180 calendar days to regain compliance with the applicable requirements.

On January 30, 2025, we received a deficiency letter from Nasdaq notifying us that, for the last 30 consecutive business days, the closing bid price for our common stock was below the minimum \$1.00 per share required for continued listing on Nasdaq pursuant to the minimum closing bid price requirement. The Nasdaq deficiency letter had no immediate effect on the listing of our common stock. In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we have been given 180 calendar days, or until July 29, 2025, to regain compliance with the minimum closing bid price requirement by causing our stock to close above \$1.00 for a minimum of 10 consecutive trading days. If we do not regain compliance with the minimum closing bid price requirement by July 29, 2025, we may be afforded a second 180 calendar day period to regain compliance. To qualify, we would be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for Nasdaq, except for the minimum bid price requirement. In addition, we would be required to notify Nasdaq of our intent to cure the deficiency during the second compliance period.

On June 24, 2025, we effected the 1-for-30 Reverse Stock Split to regain compliance with the bid price requirement prior to the July 29, 2025 compliance deadline. There is no assurance we will regain and maintain compliance with Nasdaq continued listing requirements.

If our common stock becomes subject to delisting, it would be subject to rules that impose additional sales practice requirements on broker-dealers who sell our securities. The additional burdens imposed upon broker-dealers by these requirements could discourage broker-dealers from effecting transactions in our common stock. This would adversely affect the ability of investors to trade our common stock and would adversely affect the value of our common stock. These factors could contribute to lower prices and larger spreads in the bid and ask prices for our common stock.

If our business plans are not successful, we may not be able to continue operations as a going concern and investors in this offering may lose their entire investment in us.

We have historically incurred substantial losses to fund our business operations including our research and development activities. We will, in all likelihood, sustain operating expenses without corresponding revenues for the foreseeable future. This may result in our incurring net operating losses that will increase continuously until we are able to obtain regulatory approval for, and commercialize, our product candidates, the occurrence of which cannot be assured. If we cannot continue as a going concern, investors in this offering may lose their entire investment in us.

Risks Related to Capital and Our Operations

If the Company's exploration of strategic alternatives is unsuccessful, its financial condition and results of operations may be materially adversely affected.

As previously announced, the Company has engaged a financial advisor to assist it in evaluating potential strategic alternatives to enhance stockholder value. Strategic alternatives under consideration may include, but are not limited to mergers, acquisitions, business combinations, partnerships, joint ventures, licensing arrangements or other strategic transactions. The Company and its financial advisor have engaged in preliminary discussions with potential counterparties but there is no assurance that the potential strategic alternatives will lead to a definitive agreement. If the Company is unable to consummate a strategic transaction, or if there is any significant delay in closing such a transaction, the Company's financial condition and results of operations may be materially adversely affected. In addition, the Company may be required to seek other alternatives which may include, among others, the sale of the Company or its assets, discontinuance of certain operations, a wind-down of operations and/or filing for bankruptcy protection.

We will require additional capital in order to continue our operations and may have difficulty raising additional capital.

We expect that we will continue to generate operating losses for the foreseeable future. As of March 31, 2025, our consolidated cash balance was approximately \$13.9 million. We believe our cash balance as of March 31, 2025, excluding the proceeds from this offering, is adequate to fund our basic budgeted operations into the fourth quarter of 2025.

The Company's ability to execute its current operating plan depends on its ability to obtain additional funding via the sale of equity and/or debt securities, a strategic transaction or other source of capital. The Company plans to continue actively pursuing financing alternatives, however, there can be no assurance that it will obtain the necessary funding, raising substantial doubt about the Company's ability to continue as a going concern within one year of the date these financial statements are issued. The accompanying financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Our capital requirements and our ability to meet them depend on many factors, including:

- the number of potential products and technologies in development;
- continued progress and cost of our research and development programs;
- progress with preclinical studies and clinical studies;
- the time and costs involved in obtaining regulatory clearance;
- costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims;
- costs of developing sales, marketing and distribution channels and our ability to sell our drugs;
- costs involved in establishing manufacturing capabilities for clinical study and commercial quantities of our drugs;
- competing technological and market developments;
- claims or enforcement actions with respect to our products or operations;
- market acceptance of our products;
- costs for recruiting and retaining management, employees and consultants;
- our ability to manage computer system failures or security breaches;
- costs for educating physicians regarding the application and use of our products;
- whether we are able to maintain our listing on a national exchange;
- uncertainty and economic instability resulting from conflicts, military actions, terrorist attacks, natural disasters, public health crises, including the occurrence of a contagious disease or illness, cyber-attacks and general instability; and
- the condition of capital markets and the economy generally, both in the U.S. and globally.

We may consume available resources more rapidly than currently anticipated, resulting in the need for additional funding sooner than expected. We may seek to raise any additional funds through the issuance of any combination of common stock, preferred stock, warrants and debt financings or by executing collaborative arrangements with corporate partners or other sources, any of which may be dilutive to existing stockholders or have a material effect on our current or future business prospects. If we cannot secure adequate financing when needed, we may be required to delay, scale back or eliminate one or more of our research and development programs or to enter into license or other arrangements with third parties to commercialize products or technologies that we would otherwise seek to develop and commercialize ourselves. In the event that additional funds are obtained through arrangements with collaborative partners or other sources, we may have to relinquish economic and/or proprietary rights to some of our technologies or products under development that we would otherwise seek to develop or commercialize by ourselves. In such an event, our business, prospects, financial condition and results of operations may be adversely affected.

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

Our ability to utilize our federal net operating loss and tax credit carryforwards may be limited under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code). The limitations apply if we experience an “ownership change”, generally defined as a greater than 50 percentage point change in the ownership of our equity by certain stockholders over a rolling three-year period. Similar provisions of state tax law may also apply. We have not evaluated whether such an ownership change has occurred previously. If we have experienced an ownership change at any time since our formation, we may already be subject to limitations on our ability to utilize our existing net operating losses and other tax attributes to offset taxable income. In addition, future changes in our stock ownership, which may be outside of our control, may trigger an ownership change and, consequently, the limitations under Sections 382 and 383 of the Code. As a result, if or when we earn net taxable income, our ability to use our net operating loss carryforwards and other tax attributes to offset such taxable income may be subject to limitations, which could adversely affect our future cash flows.

Risks Related to Manufacturing and Supply

We rely on a collaborative outsourced business model, and disruptions with our third-party collaborators may impede our ability to gain FDA approval and delay or impair commercialization of any products.

We are in the preclinical and clinical study phases of product development and commercialization. We have closed manufacturing operations located at our former corporate headquarters in Wisconsin and have implemented a collaboration outsourcing model to more efficiently manage costs. We rely significantly on contracts with third parties to use their facilities to conduct our research, development and manufacturing.

We have engaged AtomVie and SpectronRx as sources to supply drug product for our ongoing research and clinical studies.

In addition, we rely exclusively on contract research organizations to conduct research and development. Any inability of these organizations to fulfill the requirements of their agreements with us may delay or impair our ability to gain FDA approval and commercialization of our drug delivery technology and products.

Our reliance on third-party collaborators exposes us to risks related to not being able to directly oversee the activities of these parties. Furthermore, these collaborators, whether foreign or domestic, may experience regulatory compliance difficulties, mechanical shutdowns, employee strikes, or other unforeseeable acts that may delay fulfillment of their agreements with us. This may lead to the stopping or delay of our clinical trials or commercial manufacturing activity. Failure of any of these collaborators to provide the required services in a timely manner or on commercially reasonable terms could materially delay the development and approval of our products, increase our expenses, and materially harm our business, prospects, financial condition and results of operations.

Our current and anticipated future dependence upon these third-party manufacturers may adversely affect our ability to develop and commercialize product candidates on a timely and competitive basis, which could have an adverse effect on sales, results of operations and financial condition. If we were required to transfer manufacturing processes to other third-party manufacturers and we were able to identify an alternative manufacturer, we would still need to satisfy various regulatory requirements. Satisfaction of these requirements could cause us to experience significant delays in receiving an adequate supply of our products and products in development and could be costly. Moreover, we may not be able to transfer processes that are proprietary to the manufacturer, if any. These manufacturers may not be able to produce material on a timely basis or manufacture material at the quality level or in the quantity required to meet our development timelines and applicable regulatory requirements and may also experience a shortage in qualified personnel. We may not be able to maintain or renew our existing third-party manufacturing arrangements, or enter into new arrangements, on acceptable terms, or at all. Our third-party manufacturers could terminate or decline to renew our manufacturing arrangements based on their own business priorities, at a time that is costly or inconvenient for us. If we are unable to contract for the production of materials in sufficient quantity and of sufficient quality on acceptable terms, our planned clinical trials may be significantly delayed. Manufacturing delays could postpone the filing of our IND applications and/or the initiation or completion of clinical trials that we have currently planned or may plan in the future.

Drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA, the Drug Enforcement Administration, the EMA, national competent authorities in the EU and UK and other federal and state government and regulatory agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards and they may not be able to comply. Switching manufacturers may be difficult because the number of potential manufacturers is limited. It may be difficult or impossible for us to find a replacement manufacturer quickly on acceptable terms, or at all. Additionally, if we are required to enter into new supply arrangements, we may not be able to obtain approval from the FDA of any alternate supplier in a timely manner, or at all, which could delay or prevent the clinical development and commercialization of any related product candidates. Failure of our third-party manufacturers or us to comply with applicable regulations could result in sanctions being imposed on us, including fines, civil penalties, delays in or failure to grant marketing approval of our product candidates, injunctions, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products and compounds, operating restrictions and criminal prosecutions, warning or similar letters or civil, criminal or administrative sanctions against the company, any of which could adversely affect our business.

We believe that we have a good working relationship with our third-party collaborators. However, should the situation change, we may be required to relocate these activities on short notice, and we do not currently have access to alternate facilities to which we could relocate our research, development and/or manufacturing activities. The cost and time to establish or locate an alternate research, development and/or manufacturing facility to develop our technology would be substantial and would delay obtaining FDA approval and commercializing our products.

Furthermore, if our products are approved for commercial sale, we will need to work with our existing third-party collaborators to ensure sufficient capacity, or engage additional parties with the capacity, to commercially manufacture our products in accordance with FDA and other regulatory requirements. There can be no assurance that we would be able to successfully establish any such capacity or identify suitable manufacturing partners on acceptable terms.

Risks Related to Research and Development and the FDA

We cannot assure the successful development and commercialization of our compounds in development.

At present, our success is dependent on one or more of the following to occur: the successful development of iopofosine for the treatment of a hematologic or solid tumor cancer including Waldenstrom's macroglobulinemia, multiple myeloma and B-Cell lymphomas or the treatment of pediatric solid tumors and lymphomas; the development of new PDCs, specifically new products developed from our PDC program, and the advancement of our PDC agents through research and development; and/or commercialization partnerships.

We are a late-stage clinical biopharmaceutical company focused on the discovery, development and commercialization of drugs for the treatment of cancer. We leverage our PDC platform to specifically target cancer cells. The PDC platform possesses the potential for the discovery and development of the next generation of cancer-targeting agents. The PDC platform features include the capacity to link with almost any molecule, the delivery of a significant increase in targeted oncologic payload, and the ability to target nearly all tumor cells. As a result, we believe that we can generate PDCs to treat a broad range of cancers with the potential to improve the therapeutic index of oncologic drug payloads, enhance or maintain efficacy while reducing adverse events by minimizing drug delivery to healthy cells, and increase delivery to cancerous cells and cancer stem cells.

Our proposed products and their potential applications are in clinical and manufacturing/process development and face a variety of risks and uncertainties inherent in the development of pharmaceutical products, including the following:

- The inherent difficulty in selecting the right drug and drug target and avoiding unwanted side effects, as well as unanticipated problems relating to product development, testing, enrollment, obtaining regulatory approvals, maintaining regulatory compliance, manufacturing, competition and costs and expenses that may exceed current estimates;
- Future clinical study results may show that our cancer-targeting and delivery technologies are not well-tolerated by patients at their effective doses or are not efficacious. In future clinical trials, we or our partners may discover additional side effects and/or a higher frequency of side effects than those observed in previously completed clinical trials.
- Future clinical study results may be inconsistent with testing results obtained to-date. The results of preliminary and mid-stage clinical trials do not necessarily predict clinical or commercial success, and larger later-stage clinical trials may fail to confirm the results observed in the previous clinical trials.
- A clinical trial may show that a product candidate is safe and effective for certain patient populations in a particular indication, but other clinical trials may fail to confirm those results in a subset of that population or in a different patient population, which may limit the potential market for that product candidate.
- Even if our cancer-targeting and delivery technologies are shown to be safe and effective for their intended purposes, we may face significant or unforeseen difficulties in obtaining or manufacturing sufficient quantities at reasonable prices or at all.
- Our ability to complete the development and commercialization of our cancer-targeting and delivery technologies for their intended use is substantially dependent upon our ability to raise sufficient capital or to obtain and maintain experienced and committed partners to assist us with obtaining clinical and regulatory approvals for, clinical trial patient enrollment in, and the manufacturing, marketing and distribution of, our products.
- Even if our cancer-targeting and delivery technologies are successfully developed, approved by all necessary regulatory authorities, and commercially produced, there is no guarantee that there will be market acceptance of our products.
- Our competitors may develop therapeutics or other treatments that are superior or less costly than our own with the result that our product candidates, even if they are successfully developed, manufactured and approved, may not generate sufficient revenues to offset the development and manufacturing costs of our product candidates.

If we are unsuccessful in dealing with any of these risks, or if we are unable to successfully advance the development of our cancer-targeting and delivery technologies for some other reason, our business, prospects, financial condition and results of operations may be adversely affected.

With respect to our own compounds in development, we have established anticipated timelines with respect to the initiation of clinical trials based on existing knowledge of the compounds. However, we cannot provide assurance that we will meet any of these timelines for clinical development. Additionally, the initial results of a completed earlier clinical trial of a product candidate do not necessarily predict final results and the results may not be repeated in later clinical trials.

Because of the uncertainty of whether the accumulated preclinical evidence (PK, pharmacodynamic, safety and/or other factors) or early clinical results will be observed in later clinical trials, we can make no assurances regarding the likely results from our future clinical trials or the impact of those results on our business.

Failure to complete the development of our technologies, obtain government approvals, including required FDA approvals, or comply with ongoing governmental regulations could prevent, delay or limit introduction or sale of proposed products and result in failure to achieve revenues or maintain our ongoing business.

Our research and development activities and the manufacture and marketing of our intended products are subject to extensive regulation for safety, efficacy and quality by numerous government authorities in the U.S. and abroad. Before receiving approval to market our proposed products by the FDA, we will have to demonstrate that our products are safe and effective for the patient population for the diseases that are to be treated. Clinical studies, manufacturing and marketing of drugs are subject to the rigorous testing and approval process of the FDA and equivalent foreign regulatory authorities. The Federal Food, Drug, and Cosmetic Act and other federal, state and foreign statutes and regulations govern and influence the testing, manufacturing, labeling, advertising, distribution and promotion of drugs and medical devices. As a result, clinical studies and regulatory approval can take many years to accomplish and require the expenditure of substantial financial, managerial and other resources.

We cannot predict whether regulatory clearance or approval will be obtained for any product that we hope to develop. Of particular significance to us are the requirements relating to research and development and testing. The activities associated with the research, development and commercialization of CLR 121225, CLR 121125, iopofosine and other future candidates in our pipeline must undergo extensive clinical trials, which can take many years and require substantial expenditures, subject to extensive regulation by the FDA and other regulatory agencies in the U.S. and by comparable authorities in other countries. The process of obtaining regulatory approvals in the U.S. and other foreign jurisdictions is expensive, and lengthy, if approval is obtained at all.

Before commencing clinical trials in humans, we, or our collaborative partners, will need to submit and receive approval from the FDA of an IND application. Clinical trials are subject to oversight by institutional review boards and the FDA and:

- must be conducted in conformance with the FDA's good clinical practices and other applicable regulations;
- must meet requirements for institutional review board oversight;
- must meet requirements for informed consent;
- are subject to continuing FDA and regulatory oversight;
- may require large numbers of test subjects; and
- may be suspended by us, our collaborators or the FDA at any time if it is believed that the subjects participating in these trials are being exposed to unacceptable health risks or if the FDA finds deficiencies in the IND or the conduct of these trials.

We do not know whether we will be permitted to undertake clinical trials of potential products beyond the trials already concluded and the trials currently in process. It will take us or our collaborative partners several years to complete any such testing, and failure can occur at any stage of testing. Interim results of trials do not necessarily predict final results, and acceptable results in early trials may not be repeated in later trials. A number of companies in the pharmaceutical industry, including biotechnology companies, have suffered significant setbacks in advanced clinical trials, even after achieving promising results in earlier trials.

Before receiving FDA approval or similar approval in the European Union or other jurisdiction to market a product, we must demonstrate with substantial clinical evidence that the product is safe and effective in the patient population and the indication that will be treated. Data obtained from preclinical and clinical activities are susceptible to varying interpretations that could delay, limit or prevent regulatory approvals. Our clinical trials may fail to produce results satisfactory to the FDA or regulatory authorities in other jurisdictions. The regulatory process also requires preclinical testing, and data obtained from preclinical and clinical activities are susceptible to varying interpretations. In connection with clinical trials of our product candidates, we may face the following risks among others:

- the product candidate may not prove to be effective;
- the product candidate may cause harmful side effects;
- the clinical results may not replicate the results of earlier, smaller trials;
- we, or the FDA or similar foreign regulatory authorities, may delay, terminate or suspend the trials;
- our results may not be statistically significant;
- patient recruitment and enrollment may be slower than expected;
- patients may drop out of the trials or otherwise not enroll; and
- regulatory and clinical trial requirements, interpretations or guidance may change.

The FDA has substantial discretion in the approval process and may refuse to approve any NDA or sNDA and decide that our data is insufficient for approval and require additional preclinical, clinical or other studies. Varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent regulatory approval of our products for any individual, additional indications.

To be commercially viable, we must successfully research, develop, manufacture, introduce, and obtain the required regulatory approval described above for our product candidates, in order to market and distribute our product candidates. This includes meeting a number of critical developmental milestones, including:

- demonstrating benefit from delivery of each specific drug for specific medical indications;
- demonstrating through preclinical and clinical studies that each drug is safe and effective; and
- demonstrating that we have established viable FDA cGMPs capable of potential scale-up.

The timeframe necessary to achieve these developmental milestones may be long and uncertain, and we may not successfully complete these milestones for any of our intended products in development.

In addition to the risks previously discussed, our technology is subject to developmental risks that include the following:

- uncertainties arising from the rapidly growing scientific aspects of drug therapies and potential treatments;
- uncertainties arising as a result of the broad array of alternative potential treatments related to cancer and other diseases; and
- expense and time associated with the development and regulatory approval of treatments for cancer and other diseases.

In addition, delays or rejections may be encountered based upon additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. Failure to comply with applicable FDA or other applicable regulatory requirements may result in criminal prosecution, civil penalties, recall or seizure of products, total or partial suspension of production or injunction, adverse publicity, as well as other regulatory action against our potential products or us.

To conduct the clinical studies that are necessary to obtain approval by the FDA to market a product, it is necessary to receive clearance from the FDA to conduct such clinical studies. The FDA can halt clinical studies at any time for safety reasons or because we or our clinical investigators do not follow the FDA's requirements for conducting clinical studies. If any of our studies are halted, we will not be able to obtain FDA approval until and unless we can address the FDA's concerns. If we are unable to receive clearance to conduct clinical studies for a product, we will not be able to achieve any revenue from that product in the U.S., as it is illegal to sell any drug for use in humans in the U.S. without FDA approval.

If regulatory approval of a product is granted, this approval will be limited to those indications or disease states and conditions for which the product is demonstrated through clinical trials to be safe and efficacious. We cannot assure you that any compound developed by us, alone or with others, will prove to be safe and efficacious in clinical trials and will meet all of the applicable regulatory requirements needed to receive marketing approval.

Even if we do ultimately receive FDA approval for any of our products, these products will be subject to extensive ongoing regulation, including regulations governing manufacturing, labeling, packaging, testing, dispensing, prescription and procurement quotas, record keeping, reporting, handling, shipment and disposal of any such drug. Failure to obtain and maintain required registrations or to comply with any applicable regulations could further delay or preclude development and commercialization of our drugs and subject us to enforcement action.

Outside the US, our ability, or that of our collaborative partners, to market a product is contingent upon receiving a marketing authorization from the appropriate regulatory authorities. This foreign regulatory approval process typically includes all of the risks and costs associated with FDA approval described above and may also include additional risks and costs, such as the risk that such foreign regulatory authorities, which often have different regulatory and clinical trial requirements, interpretations and guidance from the FDA, may require additional clinical trials or results for approval of a product candidate, any of which could result in delays, significant additional costs or failure to obtain such regulatory approval. There can be no assurance, however, that we or our collaborative partners will not have to provide additional information or analysis, or conduct additional clinical trials, before receiving approval to market product candidates.

Fast track designation by the FDA may not actually lead to a faster development or regulatory review or approval process and does not assure FDA approval of our product candidates.

If a product candidate is intended for the treatment of a serious or life-threatening condition and the product candidate demonstrates the potential to address unmet medical need for this condition, the sponsor may apply for FDA fast track designation. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a fast track product has opportunities for more frequent interactions with the review team during product development, and the FDA may consider for review sections of the NDA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

However, fast track designation does not change the standards for approval and does not ensure that the product candidate will receive marketing approval or that approval will be granted within any particular timeframe. As a result, while the FDA has granted fast track designation to iopofosine for WM patients having received two or more prior treatment regimens and/or we may seek and receive fast track designation for our future product candidates, we may not experience a faster development process, review or approval compared to conventional FDA procedures. In addition, the FDA may withdraw fast track designation if it believes that the designation is no longer supported by data from our clinical development program. Fast track designation alone does not guarantee qualification for the FDA's priority review procedures.

The FDA has granted rare pediatric disease designation, RPDD, to iopofosine for treatment of neuroblastoma, rhabdomyosarcoma, Ewing's sarcoma and osteosarcoma; however, we may not be able to realize any value from such designation.

Iopofosine has received RPDD designation from the FDA for the treatment of neuroblastoma, rhabdomyosarcoma, osteosarcoma and Ewing's sarcoma. The FDA defines a "rare pediatric disease" as a disease that affects fewer than 200,000 individuals in the U.S. primarily under the age of 18 years old, or a patient population greater than 200,000 in the U.S. when there is no reasonable expectation that the cost of developing and making available the drug in the U.S. will be recovered from sales in the U.S. for that drug or biological product. Under the FDA's Rare Pediatric Disease Priority Review Voucher Program, upon the approval of an NDA or a BLA for the treatment of a rare pediatric disease, the sponsor of such application could be eligible for a Rare Pediatric Disease Priority Review Voucher that can be redeemed to obtain priority review for a subsequent NDA or BLA. The sponsor of a rare pediatric disease drug product receiving a priority review voucher may transfer (including by sale) the voucher to another sponsor. The voucher may be further transferred any number of times before the voucher is used, as long as the sponsor making the transfer has not yet submitted the application.

The FDA may also revoke any priority review voucher if the rare pediatric disease drug for which the voucher was awarded is not marketed in the U.S. within one year following the date of approval. In addition, the priority review voucher is only awarded to an NCE. Thus, if iopofosine is approved first for an indication that is not a rare pediatric disease, our application may not be eligible to receive the voucher. There is no assurance we will receive a Rare Pediatric Disease Priority Review Voucher or that it will result in a faster development process, review or approval for a subsequent marketing application. Also, although Priority Review Vouchers may be sold or transferred to third parties, there is no guaranty that we will be able to realize any value if we were to sell a Priority Review Voucher. In December 2020, the Priority Review Voucher Program was extended by the FDA permitting additional grants through September 2026 for rare pediatric diseases. It is possible that even if we obtain approval for iopofosine and qualify for a priority review voucher, the program may no longer be in effect at the time of such approval.

Furthermore, due to recent communications with the FDA regarding a confirmatory study to support accelerated approval and the regulatory submission for iopofosine, the Company is, in addition to determining the availability of funding for such a study, pursuing strategic options for the further development and commercialization of this product candidate.

Clinical studies involve a lengthy and expensive process with an uncertain outcome, and results of earlier studies may not be predictive of future study results.

To obtain regulatory approval for the commercialization of our product candidates, we must conduct, at our own expense, extensive clinical studies to demonstrate safety and efficacy of these product candidates. Clinical testing is expensive, it can take many years to complete, and its outcome is uncertain. Failure can occur at any time during the clinical study process.

We may experience delays in clinical testing of our product candidates. We do not know whether planned clinical studies will begin on time, need to be redesigned, or be completed on schedule, if at all. Clinical studies can be delayed for a variety of reasons, including delays in obtaining regulatory approval to commence a study, reaching agreement on acceptable clinical study terms with prospective sites, obtaining institutional review board approval to conduct a study at a prospective site, recruiting patients to participate in a study, or obtaining sufficient supplies of clinical study materials. Many factors affect patient enrollment, including the size of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the study, competing clinical studies, and new drugs approved for the conditions we are investigating. Prescribing physicians will also have to decide to use our product candidates over existing drugs that have established safety and efficacy profiles or other drugs undergoing development in clinical studies. Any delays in completing our clinical studies will increase our costs, slow down our product development and approval process, and delay our ability to generate revenue.

Additionally, the results of preclinical studies and early clinical studies of our product candidates do not necessarily predict the results of later-stage clinical studies. Product candidates in later stages of clinical studies may fail to show the desired safety and efficacy traits despite having progressed through initial clinical testing. The data collected from clinical studies of our product candidates may not be sufficient to support the submission of an NDA or to obtain regulatory approval in the U.S. or elsewhere. Because of the uncertainties associated with drug development and regulatory approval, we cannot determine if or when we will have an approved product for commercialization or will achieve sales or profits.

Furthermore, we typically rely on third-party clinical investigators to conduct our clinical trials and other third-party organizations to oversee the operations of such trials and to perform data collection and analysis. The clinical investigators are not our employees, and we cannot control the amount or timing of resources that they devote to our programs. Failure of the third-party organizations to meet their obligations could adversely affect clinical development of our products. As a result, we may face additional delaying factors outside our control if these parties do not perform their obligations in a timely fashion. For example, any number of those issues could arise with our clinical trials causing a delay. Delays of this sort could occur for the reasons identified above or other reasons. If we have delays in conducting the clinical trials or obtaining regulatory approvals, our product development costs will increase. For example, we may need to make additional payments to third-party investigators and organizations to retain their services or we may need to pay recruitment incentives. If the delays are significant, our financial results and the commercial prospects for our product candidates will be harmed, and our ability to become profitable will be delayed. Moreover, these third-party investigators and organizations may also have relationships with other commercial entities, some of which may compete with us. If these third-party investigators and organizations assist our competitors at our expense, it could harm our competitive position.

Our clinical studies may not demonstrate sufficient levels of efficacy necessary to obtain the requisite regulatory approvals for our drugs, and our proposed drugs may not be approved for marketing.

We may not be able to initiate or continue clinical studies or trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these clinical trials as required by the FDA or other regulatory authorities. Even if we are able to enroll a sufficient number of patients in our clinical trials, if the pace of enrollment is slower than we expect, the development costs for our product candidates may increase and the completion of our clinical trials may be delayed, or our clinical trials could become too expensive to complete. Significant delays in clinical testing could negatively impact our product development costs and timing. Our estimates regarding timing are based on a number of assumptions, including assumptions based on past experience with our other clinical programs. If we are unable to enroll the patients in these trials at the projected rate, the completion of the clinical program could be delayed and the costs of conducting the program could increase, either of which could harm our business.

We may be required to suspend or discontinue clinical studies because of unexpected side effects or other safety risks that could preclude approval of our product candidates.

Our clinical studies may be suspended at any time for a number of reasons. For example, we may voluntarily suspend or terminate our clinical studies if at any time we believe that they present an unacceptable risk to the clinical study patients. In addition, regulatory agencies may order the temporary or permanent discontinuation of our clinical studies at any time if they believe that the clinical studies are not being conducted in accordance with applicable regulatory requirements or that they present an unacceptable safety risk to the clinical study patients.

Administering any product candidates to humans may produce undesirable side effects. These side effects could interrupt, delay or halt clinical studies of our product candidates and could result in the FDA or other regulatory authorities denying further development or approval of our product candidates for any or all targeted indications. Ultimately, some or all of our product candidates may prove to be unsafe for human use. Moreover, we could be subject to significant liability if any volunteer or patient suffers, or appears to suffer, adverse health effects as a result of participating in our clinical studies.

The biopharmaceutical industry is subject to extensive regulatory obligations and policies that are subject to change, including due to judicial challenges.

On June 28, 2024, the U.S. Supreme Court issued an opinion holding that courts reviewing agency action pursuant to the Administrative Procedure Act (APA) “must exercise their independent judgment” and “may not defer to an agency interpretation of the law simply because a statute is ambiguous.” The decision will have a significant impact on how lower courts evaluate challenges to agency interpretations of law, including those by the FDA and other agencies with significant oversight of the biopharmaceutical industry. The new framework is likely to increase both the frequency of such challenges and their odds of success by eliminating one way in which the government previously prevailed in such cases. As a result, significant regulatory policies will be subject to increased litigation judicial scrutiny. Any resulting changes in regulation may result in unexpected delays, increased costs, or other negative impacts on our business that are difficult to predict.

Risks Related to Legal Compliance and Litigation

Controls we or our third-party collaborators have in place to ensure compliance with all applicable laws and regulations may not be effective.

We and our third-party collaborators are subject to federal, state and local laws and regulations governing the storage, use and disposal of hazardous materials and waste products. Current or future regulations may impair our research, development, manufacturing and commercialization efforts. The inability of our third-party collaborators to maintain the required licenses and permits for any reason will negatively impact our manufacturing, and research and development activities. In addition, we may be required to indemnify third-party collaborators against certain liabilities arising out of any failure by them to comply with such regulations and/or laws. If we or our third-party collaborators fail to comply with any of these regulations and/or laws, a range of consequences could result, including the suspension or termination of clinical studies, failure to obtain approval of a product candidate, restrictions on our products or manufacturing processes, withdrawal of our products from the market, significant fines, exclusion from government healthcare programs, or other sanctions or litigation.

We are exposed to product, clinical and preclinical liability risks that could create a substantial financial burden should we be sued.

Our business exposes us to potential product liability and other liability risks that are inherent in the testing, manufacturing and marketing of pharmaceutical products. In addition, the use in our clinical studies of pharmaceutical products that we, or our current or potential collaborators, may develop and then subsequently sell, may cause us to bear a portion of, or all, product liability risks. While we carry an insurance policy covering up to \$5,000,000 per occurrence and \$5,000,000 in the aggregate for liability incurred in connection with such claims should they arise, there can be no assurance that our insurance will be adequate to cover all situations. Moreover, there can be no assurance that such insurance, or additional insurance if required, will be available or, if available, will be available on commercially reasonable terms. Furthermore, our current and potential partners with whom we have collaborative agreements, or our future licensees, may not be willing to indemnify us against these types of liabilities and may not themselves be sufficiently insured or have a net worth sufficient to satisfy any product liability claims. A successful product liability claim or series of claims brought against us could have a material adverse effect on our business, prospects, financial condition and results of operations.

Risks Related to Intellectual Property

We expect to rely on our patents as well as specialized regulatory designations such as orphan drug classification for our product candidates, but regulatory drug designations may not confer marketing exclusivity or other expected commercial benefits.

We expect to file for ODD or other regulatory designations (fast track, break-through, priority review, etc.) as appropriate for our product candidates. We have been granted ODD in the U.S. for iopofosine as a therapeutic for the treatment of multiple myeloma, neuroblastoma, osteosarcoma, rhabdomyosarcoma, Ewing's sarcoma and lymphoplasmacytic lymphoma/Waldenstrom's macroglobulinemia. Additionally, we have been granted ODD in Europe for iopofosine as a therapeutic for the treatment of multiple myeloma and Waldenstrom's macroglobulinemia.

Under the Orphan Drug Act, the FDA may grant orphan drug designation to a drug or biologic intended to treat a rare disease or condition, which is defined as one occurring in a patient population of fewer than 200,000 in the US, or a patient population greater than 200,000 in the US where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the US. In the US, orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers. In addition, if a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications, including a full NDA, to market the same drug for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or where the manufacturer is unable to assure sufficient product quantity.

Even though we have received ODD as described above, we may not be the first to obtain marketing approval for the orphan-designated indication because of the uncertainties associated with developing pharmaceutical products. For any product candidate for which we have been or will be granted ODD in a particular indication, it is possible that another company also holding ODD for the same product candidate will receive marketing approval for the same indication before we do. If that were to happen, our applications for that indication may not be approved until the competing company's period of exclusivity expires. In addition, exclusive marketing rights in the US for iopofosine for an orphan-designated indication or any future product candidate may be limited if we seek approval for an indication broader than the orphan-designated indication or may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition. We will not be able to rely on it to exclude other companies from manufacturing or selling products using the same principal molecular structural features for the same indication beyond these timeframes without our patent portfolio. Even if we were the first to obtain marketing authorization for an orphan drug indication, there are circumstances under which a competing product may be approved for the same indication during the seven-year period of marketing exclusivity, such as if the later product is shown to be clinically superior to the product with orphan exclusivity. Even after an orphan product is approved, the FDA can subsequently approve the same drug with the same active moiety for the same condition if the FDA concludes that the later drug is safer, more effective, or makes a major contribution to patient care. In addition, exclusive marketing rights in the US for iopofosine or any future product candidate may be limited if we seek approval for an indication broader than the orphan-designated indication or may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Further, even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition. Further, the seven-year marketing exclusivity, if granted, would not prevent competitors from obtaining approval of the same product candidate as ours for indications other than those in which we have been granted ODD, or for other indications if not for our patent portfolio, or for the use of other types of products in the same indications as our orphan product. Furthermore, although the ODD and exclusivity are in effect right now, the FDA has the authority to modify this assessment at any time. Orphan drug designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process.

In addition, Congress is considering updates to the orphan drug provisions of the FDCA in response to a recent decision by the U.S. Court of Appeals for the Eleventh Circuit. Any changes to the orphan drug provisions could change our opportunities for, or likelihood of success in obtaining, orphan drug exclusivity and would materially adversely affect our business, results of operations, financial condition and prospects.

We may face litigation from third parties claiming our products infringe on their intellectual property rights, particularly because there is often substantial uncertainty about the validity and breadth of medical patents.

We may be exposed to future litigation by third parties based on claims that our technologies, products or activities infringe on the intellectual property rights of others or that we have misappropriated the trade secrets of others. This risk is exacerbated by the fact that the validity and breadth of claims covered in medical technology patents, and the breadth and scope of trade-secret protection, involve complex legal and factual questions for which important legal principles are unresolved. Any litigation or claims against us, whether valid or not, could result in substantial costs, place a significant strain on our financial and managerial resources, and harm our reputation. License agreements that we may enter into in the future would likely require that we pay the costs associated with defending this type of litigation. In addition, intellectual property litigation or claims could force us to do one or more of the following:

- cease selling, incorporating or using any of our technologies and/or products that incorporate the challenged intellectual property, which would adversely affect our ability to generate revenue;
- obtain a license from the holder of the infringed intellectual property right, which license may be costly or may not be available on reasonable terms, if at all; or
- redesign our products, which would be costly and time-consuming.

If we are unable to adequately protect or enforce our rights to intellectual property or to secure rights to third-party patents, we may lose valuable rights, experience reduced market share, assuming any, or incur costly litigation to protect our intellectual property rights.

Our ability to obtain licenses to patents, maintain trade-secret protection, and operate without infringing the proprietary rights of others will be important to commercializing any products under development. Therefore, any disruption in access to the technology could substantially delay the development of our technology.

The patent positions of biotechnology and pharmaceutical companies, such as ours, for products that involve licensing agreements are frequently uncertain and involve complex legal and factual questions. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued or in subsequent legal proceedings. Consequently, our patent applications and any issued and licensed patents may not provide protection against competitive technologies or may be held invalid if challenged or circumvented. To the extent we license patents from third parties, the early termination of any such license agreement would result in the loss of our rights to use the covered patents, which could severely delay, inhibit or eliminate our ability to develop and commercialize compounds based on the licensed patents. Our competitors may also independently develop products similar to ours or design around or otherwise circumvent patents issued or licensed to us. In addition, the laws of some foreign countries may not protect our proprietary rights to the same extent as U.S. law.

We also rely on trade secrets, technical know-how and continuing technological innovation to develop and maintain our competitive position. Although we generally require our employees, consultants, advisors, and collaborators to execute appropriate confidentiality and assignment-of-inventions agreements, our competitors may independently develop substantially equivalent proprietary information and techniques, reverse engineer our information and techniques, or otherwise gain access to our proprietary technology. We may be unable to meaningfully protect our rights in trade secrets, technical know-how and other non-patented technology.

We may have to resort to litigation to protect our rights for certain intellectual property or to determine the scope, validity or enforceability of our intellectual property rights. Enforcing or defending our rights would be expensive, could cause diversion of our resources, and may not prove successful. Any failure to enforce or protect our rights could cause us to lose the ability to exclude others from using our technology to develop or sell competing products.

Risks Related to Our Employees

We rely on a small number of key personnel who may terminate their employment with us at any time, and our success will depend on our ability to hire additional qualified personnel.

Our success depends to a significant degree on the continued services of our executive officers, including our Chief Executive Officer, James V. Caruso. Our management and other employees may voluntarily terminate their employment with us at any time, and there can be no assurance that these individuals will continue to provide services to us. Our success will depend on our ability to attract and retain highly skilled personnel. We may be unable to recruit such personnel on a timely basis, if at all. The loss of services of key personnel, or the inability to attract and retain additional qualified personnel, could result in delays in development or approval of our products, loss of sales and diversion of management resources.

Confidentiality agreements with employees and others may not adequately prevent disclosure of our trade secrets and other proprietary information and may not adequately protect our intellectual property, which could limit our ability to compete.

We operate in the highly technical field of research and development of small-molecule drugs and rely, in part, on trade-secret protection in order to protect our proprietary trade secrets and unpatented know-how. However, trade secrets are difficult to protect, and we cannot be certain that our competitors will not develop the same or similar technologies on their own. We have taken steps, including entering into confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors, to protect our trade secrets and unpatented know-how. These agreements generally require that the other party keep confidential and not disclose to third parties all confidential information developed by the party or made known to the party by us during the course of the party's relationship with us. Also, we typically obtain agreements from these parties that inventions conceived by them in the course of rendering services to us will be our exclusive property. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. Enforcing a claim that a party has illegally obtained, and is using our trade secrets or know-how, is difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, courts outside the U.S. may be less willing to protect trade secrets or know-how. The failure to obtain or maintain trade-secret protection could adversely affect our competitive position.

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

As is common in the biotechnology and pharmaceutical industry, we engage individuals who were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors or who are employed by academic research institutions. Although no claims against us are currently pending, we may be subject to claims that we, or these employees, have used or disclosed trade secrets or other proprietary information of their current or former employers, either inadvertently or otherwise. 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.

Risks Related to Commercialization of our Products

Acceptance of our products in the marketplace is uncertain and failure to achieve market acceptance will prevent or delay our ability to generate revenues.

Our future financial performance will depend, at least in part, on the introduction and customer acceptance of our proposed products. Even if approved for marketing by the necessary regulatory authorities, our products may not achieve market acceptance. The degree of market acceptance will depend on several factors, including:

- receiving regulatory clearance of marketing claims for the uses that we are developing;
- the timing of market introduction of the product as well as competitive products;
- the clinical indications for which the product is approved;
- establishing and demonstrating the advantages, safety and efficacy of our technologies;
- relative convenience and ease of administration, and the convenience of prescribing, administering and initiating patients on the product and the length of time the patient is on the product;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the willingness of physicians to change their current treatment practices;
- the willingness of hospitals and hospital systems to include our product candidates as treatment options;
- demonstration of efficacy and safety in clinical trials;
- the prevalence and severity of any side effects;
- the ability to offer product candidates for sale at competitive prices;
- the price we charge for our product candidates;
- the strength of marketing and distribution support;
- the ability to distinguish safety and efficacy from existing, less expensive generic alternative therapies, if any;
- the potential and perceived value and advantages of the product over alternative treatments;
- the cost of treatment in relation to alternative treatments, including any similar generic treatments;
- pricing and reimbursement policies of government and third-party payors such as insurance companies, health maintenance organizations and other health plan administrators;
- attracting corporate partners, including pharmaceutical companies, to assist in commercializing our intended products; and
- marketing our products.

Physicians, patients, payors, or the medical community in general, may be unwilling to accept, use, or recommend any of our products. If we are unable to obtain regulatory approval or commercialize and market our proposed products as planned, we may not achieve any market acceptance or generate revenue. If we are unable to sustain anticipated levels of sales growth from our products, if approved, we may need to reduce our operating expenses, access other sources of cash or otherwise modify our business plans, which could have a negative impact on our business, financial condition and results of operations.

Regulatory approval for any approved product is limited by the FDA, the European Commission, and other regulators, to those specific indications and conditions for which clinical safety and efficacy have been demonstrated, and we may incur significant liability if it is determined that we are promoting the “off-label” use of any of our future product candidates if approved.

Any regulatory approval is limited to those specific diseases, indications and patient populations for which a product is deemed to be safe and effective by the FDA, the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency and other regulators. In addition to the FDA approval required for new formulations, any new indication for an approved product also requires FDA approval. If we are not able to obtain FDA approval for any desired future indications for our products and product candidates, our ability to effectively market and sell our products may be reduced and our business may be adversely affected.

While physicians may choose to prescribe drugs for uses that are not described in the product's labeling and for uses that differ from those tested in clinical studies and approved by the regulatory authorities, our ability to promote the products is limited to those indications and patient populations that are specifically approved by the FDA or similar regulatory authorities in jurisdictions outside the U.S. These "off-label" uses are common across medical specialties and may constitute an appropriate treatment for some patients in varied circumstances. We have implemented compliance and monitoring policies and procedures, including a process for internal review of promotional materials, to deter the promotion for off-label uses. We cannot guarantee that these compliance activities will prevent or timely detect off-label promotion by sales representatives or other personnel in their communications with health care professionals, patients and others, particularly if these activities are concealed from the Company. Regulatory authorities in the US generally do not regulate the behavior of physicians in their choice of treatments. Regulatory authorities do, however, restrict communications by pharmaceutical companies on the subject of off-label use. If our promotional activities fail to comply with the FDA's or other competent national authority's regulations or guidelines, we may be subject to warnings from, or enforcement action by, these regulatory authorities. In addition, our failure to follow FDA rules and guidelines relating to promotion and advertising may cause the FDA to issue warning letters or untitled letters, suspend or withdraw an approved product from the market, require a recall or institute fines, which could result in the disgorgement of money, operating restrictions, injunctions or civil or criminal enforcement, and other consequences, any of which could harm our business.

Notwithstanding the regulatory restrictions on off-label promotion, the FDA and other regulatory authorities allow companies to engage in truthful, non-misleading and non-promotional scientific exchange concerning their products. We engage in medical education activities and communicate with investigators and potential investigators regarding our clinical trials. If the FDA or other regulatory or enforcement authorities determine that our communications regarding our marketed product are not in compliance with the relevant regulatory requirements and that we have improperly promoted off-label uses, or that our communications regarding our investigational products are not in compliance with the relevant regulatory requirements and that we have improperly engaged in pre-approval promotion, we may be subject to significant liability, including civil and administrative remedies as well as criminal sanctions.

Any product for which we have obtained regulatory approval, or for which we obtain approval in the future, is subject to, or will be subject to, extensive ongoing regulatory requirements by the FDA, EMA and other comparable regulatory authorities, and if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, we may be subject to penalties, we may be unable to generate revenue from the sale of such products, our potential for generating positive cash flow may be diminished, and the capital necessary to fund our operations may be increased.

Any product for which we have obtain regulatory approval in the future, along with the manufacturing processes and practices, post-approval clinical research, product labeling, advertising and promotional activities for such product, are subject to continual requirements of, and review by, the FDA, the EMA and other comparable international regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, current good manufacturing practices (cGMP) requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians, import and export requirements and recordkeeping. If we or our suppliers encounter manufacturing, quality or compliance difficulties with respect to any of our product candidates, when and if approved, we may be unable to obtain or maintain regulatory approval or meet commercial demand for such products, which could adversely affect our business, financial conditions, results of operations and growth prospects.

In addition, the FDA often requires post-marketing testing and surveillance to monitor the effects of products. The FDA, the EMA and other comparable international regulatory agencies may condition approval of our product candidates on the completion of such post-marketing clinical studies. These post-marketing studies may suggest that a product causes undesirable side effects or may present a risk to the patient. Additionally, the FDA may require a REMS to help ensure that the benefits of the drug outweigh its risks. A REMS may be required to include various elements, such as a medication guide or patient package insert, a communication plan to educate healthcare providers of the drug's risks, limitations on who may prescribe or dispense the drug, requirements that patients enroll in a registry or undergo certain health evaluations or other measures that the FDA deems necessary to ensure the safe use of the drug.

Discovery after approval of previously unknown problems with any of our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in actions such as:

- restrictions on our ability to conduct clinical trials, including full or partial clinical holds on ongoing or planned trials;
- restrictions on product manufacturing processes;
- restrictions on the marketing of a product;
- restrictions on product distribution;
- requirements to conduct post-marketing clinical trials;
- untitled or warning letters or other adverse publicity;
- withdrawal of products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- refusal to permit the import or export of our products;
- product seizure;
- fines, restitution or disgorgement of profits or revenue;
- refusal to allow us to enter into supply contracts, including government contracts;
- injunctions; or
- imposition of civil or criminal penalties.

If such regulatory actions are taken, the value of our company and our operating results will be adversely affected. Additionally, if the FDA, the EMA or any other comparable international regulatory agency withdraws its approval of a product that is or may be approved, we will be unable to generate revenue from the sale of that product in the relevant jurisdiction, our potential for generating positive cash flow will be diminished and the capital necessary to fund our operations will be increased. Accordingly, we continue to expend significant time, money and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance, post-marketing studies and quality control.

If any of our third-party contractors fail to perform their responsibilities to comply with FDA rules and regulations, the marketing and sales of our products could be delayed and we may be subject to enforcement action, which could decrease our revenues.

Conducting our business requires us to manage relationships with third-party contractors. As a result, our success depends partially on the success of these third parties in performing their responsibilities to comply with FDA rules and regulations. Although we pre-qualify our contractors and we believe that they are fully capable of performing their contractual obligations, we cannot directly control the adequacy and timeliness of the resources and expertise that they apply to these activities.

If any of our partners or contractors fail to fulfil their obligations in an adequate and timely manner or fail to comply with the FDA's rules and regulations, then the marketing and sales of our products could be delayed. The FDA may also take enforcement actions against us based on compliance issues identified with our contractors. If any of these events occur, we may incur significant liabilities, which could decrease our revenues. For example, sales and medical science liaison or MSL personnel, including contractors, must comply with FDA requirements for the advertisement and promotion of products.

If manufacturers obtain approval for generic versions of our products, once approved, or of products with which we compete, our business may be harmed.

Under the FDCA, the FDA can approve an abbreviated new drug application (ANDA) for a generic version of a branded drug without the ANDA applicant undertaking the clinical testing necessary to obtain approval to market a new drug. Generally, in place of such clinical studies, an ANDA applicant usually needs only to submit data demonstrating that its product has the same active ingredient(s), strength, dosage form and route of administration and that it is bioequivalent to the branded product.

The FDCA requires that an applicant for approval of a generic form of a branded drug certify either that its generic product does not infringe any of the patents listed by the owner of the branded drug in the Orange Book or that those patents are not enforceable. This process is known as a paragraph IV challenge. Upon notice of a paragraph IV challenge, a patent owner has 45 days to bring a patent infringement suit in federal district court against the company seeking ANDA approval of a product covered by one of the owner's patents. If this type of suit is commenced, the FDCA provides a 30-month stay on the FDA's approval of the competitor's application. If the litigation is resolved in favor of the ANDA applicant or the challenged patent expires during the 30-month stay period, the stay is lifted, and the FDA may thereafter approve the application based on the standards for approval of ANDAs. Once an ANDA is approved by the FDA, the generic manufacturer may market and sell the generic form of the branded drug in competition with the branded medicine.

The ANDA process can result in generic competition if the patents at issue are not upheld or if the generic competitor is found not to infringe the owner's patents. If this were to occur with respect to iopofosine or any future products, once approved, with which our products compete, our business would be harmed.

Unforeseen safety issues could emerge with our products, once approved, that could require us to change the prescribing information to add warnings, limit use of the product, and/or result in litigation. Any of these events could have a negative impact on our business.

Discovery of unforeseen safety problems or increased focus on a known problem with respect to our products, once approved, could impact our ability to commercialize our products and could result in restrictions on its permissible uses, including withdrawal of the medicine from the market.

If we or others identify additional undesirable side effects caused by our products after approval:

- regulatory authorities may require the addition of labeling statements, specific warnings, contraindications, or field alerts to physicians and pharmacies;
- regulatory authorities may withdraw their approval of the product and require us to take our approved drugs off the market;
- we may be required to change the way the product is administered, conduct additional clinical trials, change the labeling of the product, or implement a Risk Evaluation and Mitigation Strategy, or REMS;
- we may have limitations on how we promote our drugs;
- third-party payers may limit coverage or reimbursement for our products;
- sales of our approved products may decrease significantly;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of our products, once approved and could substantially increase our operating costs and expenses, which in turn could delay or prevent us from generating significant revenue from sale of any products for which we obtain approval.

If a safety issue emerges post-approval, we may become subject to costly product liability litigation by our customers, their patients or payers. Product liability claims could divert management's attention from our core business, be expensive to defend, and result in sizable damage awards against us that may not be covered by insurance. If we cannot successfully defend ourselves against claims that our approved products caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- the inability to commercialize any products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of patients from clinical studies or cancellation of studies;
- significant costs to defend the related litigation;
- substantial monetary awards to patients; and
- loss of revenue.

The market for our proposed products is rapidly changing and competitive, and new therapeutics, drugs and treatments that may be developed by others could impair our ability to develop our business or become competitive.

The pharmaceutical and biotechnology industries are subject to rapid and substantial technological change. Developments by others may render our technologies and proposed products noncompetitive or obsolete, or we may be unable to keep pace with technological developments or other market factors. Technological competition from pharmaceutical and biotechnology companies, universities, governmental entities and others diversifying into the field is intense and expected to increase. Most of these entities have significantly greater research and development capabilities and budgets than we do, as well as substantially more marketing, manufacturing, financial and managerial resources. These entities represent significant competition for us. Acquisitions of, or investments in, competing pharmaceutical or biotechnology companies by large corporations could increase our competitors' financial, marketing, manufacturing and other resources.

Our resources are limited, and we may experience management, operational or technical challenges inherent in our activities and novel technologies. Competitors have developed, or are in the process of developing, technologies that are, or in the future may be, the basis for competition. Some of these technologies may accomplish therapeutic effects similar to those of our technology, but through different means. Our competitors may develop drugs and drug delivery technologies that are more effective than our intended products and, therefore, present a serious competitive threat to us.

The potential widespread acceptance of therapies that are alternatives to ours may limit market acceptance of our products even if they are commercialized. Many of our targeted diseases and conditions can also be treated by other medication or drug delivery technologies. These treatments may be widely accepted in medical communities and have a longer history of use. The established use of these competitive drugs may limit the potential for widespread acceptance of our technologies and products if commercialized.

As a result of continued changes in marketing, sales and distribution, we may be unsuccessful in our efforts to sell our proposed products, develop a direct sales organization, or enter into relationships with third parties.

We have not established marketing, sales or distribution capabilities for our proposed products. Until such time as our proposed products are further along in the development process, we will not devote any meaningful time and resources to this effort. At the appropriate time, we will determine whether we will develop our own sales and marketing capabilities or enter into agreements with third parties to sell our products.

We have limited experience in developing, training or managing a sales force. If we choose to establish a direct sales force, we may incur substantial additional expenses in developing, training and managing such an organization. We may be unable to build a sales force on a cost-effective basis or at all. In addition, we will compete with many other companies that currently have extensive marketing and sales operations. Our marketing and sales efforts may be unable to compete against these other companies. We may be unable to establish a sufficient sales and marketing organization on a cost-effective or timely basis, if at all.

If we choose to enter into agreements with third parties to sell our proposed products, we may be unable to establish or maintain third-party relationships on a commercially reasonable basis, if at all. In addition, these third parties may have similar or more established relationships with our competitors.

We may be unable to engage qualified distributors. Even if engaged, these distributors may:

- fail to adequately market our products;
- fail to satisfy financial or contractual obligations to us;
- offer, design, manufacture or promote competing products; or
- cease operations with little or no notice.

If we fail to develop sales, marketing and distribution channels, we would experience delays in product sales and incur increased costs, which would have a material adverse effect on our business, prospects, financial condition and results of operation.

If we are unable to convince physicians of the benefits of our intended products, we may incur delays or additional expense in our attempt to establish market acceptance.

Achieving use of our products in the target market of cancer diagnosis and treatment may require physicians to be informed regarding these products and their intended benefits. The time and cost of such an educational process may be substantial. Inability to successfully carry out this physician education process may adversely affect market acceptance of our proposed products. We may be unable to educate physicians, in sufficient numbers, in a timely manner regarding our intended proposed products to achieve our marketing plans and product acceptance. Any delay in physician education may materially delay or reduce demand for our proposed products. In addition, we may expend significant funds towards physician education before any acceptance or demand for our proposed products is created, if at all.

Efforts to educate the physicians, patients, healthcare payors and others in the medical community on the benefits of our product candidates may require significant resources and may not be successful. If any of our product candidates are approved, if at all, but do not achieve an adequate level of acceptance, we may not generate significant product revenue and we may not become profitable on a sustained basis.

If our products are unable to obtain adequate reimbursement from third-party payors, or if additional healthcare reform measures are adopted, it could hinder or prevent the commercial success of our product candidates.

The commercial success of any product for which we obtain regulatory approval in the future will depend substantially on the extent to which the costs of our product or product candidates are or will be paid by third-party payors, including government health care programs and private health insurers. There is a significant trend in the health care industry by public and private payers to contain or reduce their costs, including by taking the following steps, among others: decreasing the portion of costs payers will cover, ceasing to provide full payment for certain products depending on outcomes or not covering certain products at all. If payers implement any of the foregoing with respect to our products, it would have an adverse impact on our revenue and results of operations. If coverage is not available, or reimbursement is limited, we, or any of our collaborative partners, may not be able to successfully commercialize our product candidates in some jurisdictions. Even if coverage is provided, the approved reimbursement amount may not be at a rate that covers our costs, including research, development, manufacture, sale and distribution. In the U.S., no uniform policy of coverage and reimbursement for products exists among third-party payors; therefore, coverage and reimbursement levels for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time consuming and costly process that may require us to provide scientific, clinical or other support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

In both the U.S. and some foreign jurisdictions, there have been a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. For example, the Affordable Care Act which was passed in March 2010 and substantially changed the way healthcare is financed by both governmental and private insurers, has been subject to judicial, legislative, and regulatory efforts to replace it or to alter its interpretation or implementation. Congress has considered legislation that would repeal or repeal and replace all or part of the Affordable Care Act. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the Affordable Care Act have been enacted. The Tax Cuts and Jobs Act of 2017 included a provision that repealed the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the “individual mandate”. In addition, the Consolidated Appropriations Act of 2020 fully repealed the Affordable Care Act’s mandated “Cadillac” tax on high-cost employer-sponsored health coverage and medical device tax and also eliminated the health insurer tax. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the Affordable Care Act brought by several states without specifically ruling on the constitutionality of the law. It is unclear how future actions before the Supreme Court, other such litigation, and any healthcare reform measures of the Trump administration will impact the Affordable Care Act.

Other legislative changes have been proposed and adopted in the U.S. since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation’s automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013, and, as a result of subsequent legislative amendments, will remain in effect into 2031, unless additional Congressional action is taken. However, COVID-19 relief support legislation suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2022 with a subsequent reduction to 1% implemented from April 1, 2022 until June 30, 2022. To offset the temporary suspension during the COVID-19 pandemic, in 2030, reductions in Medicare payments will be 2.25% for the first half of the year, and 3% in the second half of the year. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012 (ATRA), which, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

Enacted and future legislation may increase the difficulty and cost for us to commercialize our product candidates and may affect the prices we may set.

In the U.S., there have been several recent Congressional inquiries and federal legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer-sponsored patient assistance programs, and reform government program reimbursement methodologies for drugs. See Part I, Item 1, Business-Regulation-Reimbursement and Pricing Controls in our Annual Report on Form 10-K for the year ended December 31, 2024 for more information on recent healthcare reform measures that may affect our ability to operate.

We cannot predict the likelihood, nature, or extent of health reform initiatives that may arise from future legislation or administrative action. However, we expect these initiatives to increase pressure on drug pricing. Further, certain broader legislation that is not targeted to the health care industry may nonetheless adversely affect our profitability. Any additional healthcare reform measures could limit the amounts that the U.S. federal government will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws and other federal and state healthcare laws, and the failure to comply with such laws could result in substantial penalties. Our employees, independent contractors, consultants, principal investigators, CROs, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payers and customers, may expose us to broadly applicable federal, state and foreign fraud and abuse and other healthcare laws and regulations including anti-kickback and false claims laws, data privacy and security laws, and transparency reporting laws. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute any product for which we have obtained regulatory approval, or for which we obtain regulatory approval in the future. In particular, the promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws and regulations intended to prevent fraud, misconduct, bribery kickbacks, self-dealing and other abusive or inappropriate practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, including promoting off-label uses of our products, commission compensation, certain customer incentive programs, certain patient support offerings, and other business arrangements generally. Activities subject to these laws also involve the improper use or misrepresentation of information obtained in the course of patient recruitment for clinical trials, creating fraudulent data in our preclinical studies or clinical trials or illegal misappropriation of drug product, which could result in regulatory sanctions and cause serious harm to our reputation. See “Part I, Item 1, Business - Regulation - Other U.S. Regulatory Requirements” of our Annual Report on Form 10-K for more information on the healthcare laws and regulations that may affect our ability to operate.

We are also exposed to the risk of fraud, misconduct or other illegal activity by our employees, independent contractors, consultants, principal investigators, CROs, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and/or negligent conduct that fails to: comply with the laws of the FDA and other similar foreign regulatory bodies; provide true, complete and accurate information to the FDA and other similar foreign regulatory bodies; comply with manufacturing standards we have established; comply with federal and state data privacy, security, fraud and abuse and other healthcare laws and regulations in the US and similar foreign fraudulent misconduct laws; or report financial information or data accurately or to disclose unauthorized activities to us. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent inappropriate conduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations.

We are also subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. Efforts to ensure that our business arrangements will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal and administrative penalties, damages, disgorgement, monetary fines, imprisonment, additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Risks Related to Internal Controls

We identified certain misstatements to our previously issued financial statements and have restated the financial statements described below, which has exposed us to additional risks and uncertainties.

We have restated our previously issued audited financial statements as of and for the years ended December 31, 2022 and 2023 and our interim financial statements as of and for the quarterly periods ended March 31, 2024, March 31, 2023 through September 30, 2023 and March 31, 2022 through September 30, 2022.

As a result of the misstatements discussed and the Restatement, we have become subject to a number of additional risks and uncertainties and unanticipated costs for accounting, legal and other fees and expenses, including risks of lawsuits relating to securities offered by us in public and private offerings as well as claims by purchasers of our shares of common stock in the public market. Any actions, lawsuit or other legal proceedings related to the misstatements or the Restatement could result in liabilities, reputational harm and defense and other costs, regardless of the outcome of the lawsuit or proceeding.

We cannot ensure that litigation or other claims by stockholders will not be brought in the future arising out of the Restatement. We may also be subject to further examinations, investigations, proceedings and orders by regulatory authorities as a result of the Restatement. Any such further actions could be expensive and damaging to our business, results of operations and financial condition.

We identified material weaknesses in our internal control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain effective internal control over financial reporting, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect our business and share price.

We are required to establish and maintain appropriate internal controls over financial reporting. Rules adopted by the SEC pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 require an annual assessment of internal controls over financial reporting and for certain issuers an attestation of this assessment by the issuer's independent registered public accounting firm. The standards to assess that our internal controls over financial reporting are effective are evolving and complex, require significant documentation and testing, and may require remediation if they are not met. We expect to incur significant expenses and to devote resources to Section 404 compliance on an ongoing basis. It is difficult for us to predict how long it will take or costly it will be to complete the assessment of the effectiveness of our internal control over financial reporting for each year and to remediate any deficiencies in our internal control over financial reporting. As a result, we may not be able to complete the assessment and remediation process on a timely basis. In addition, although attestation requirements by our independent registered public accounting firm are not presently applicable to us, we could become subject to these requirements in the future, and we may encounter problems or delays in completing the implementation of any resulting changes to internal controls over financial reporting.

Effective internal controls are necessary for us to provide reasonable assurance with respect to our financial reports and to effectively prevent fraud. Failure to maintain effective internal controls could adversely affect our public disclosures regarding our business, prospects, financial condition, or results of operations. In addition, management's assessment of internal controls over financial reporting may identify weaknesses and conditions that need to be addressed in our internal controls over financial reporting or other matters that may raise concerns for investors. Any actual or perceived weaknesses and conditions that need to be addressed in our internal control over financial reporting or disclosure of management's assessment of our internal controls over financial reporting our business and results of operations could be harmed, we could fail to meet our reporting obligations, and there could be a material adverse effect on our common stock price. There are identified material weaknesses that are described further in Item 9A. of our Annual Report on Form 10-K for the year ended December 31, 2024. These material weaknesses resulted in our historical financial statements requiring restatement, as is noted above, and delayed our required filings with the SEC, a situation that could recur in the event that we do not effectively remediate the existing material weaknesses and/or experience additional material weaknesses.

Risks Related to Our Equity Securities

Our common stock could be further diluted as the result of the issuance of additional shares of common stock, convertible securities, warrants or options.

In the past, we have issued common stock, convertible securities (such as convertible preferred stock and notes payable) and warrants to raise capital. We have also issued equity as compensation for services and incentive compensation for our employees and directors. We have shares of common stock reserved for issuance upon the exercise of certain of these securities and may increase the shares reserved for these purposes in the future. Our issuance of additional common stock, convertible securities, options and warrants could dilute our common stock, affect the rights of our stockholders, reduce the market price of our common stock, result in adjustments to exercise prices of outstanding warrants (resulting in these securities becoming exercisable for, as the case may be, a greater number of shares of our common stock), or obligate us to issue additional shares of common stock to certain of our stockholders.

Provisions of our certificate of incorporation, by-laws, and Delaware law may make an acquisition of us or a change in our management more difficult.

Certain provisions of our certificate of incorporation and by-laws could discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which an investor might otherwise receive a premium for its shares. These provisions also could limit the price that investors might be willing to pay in the future for shares of our common stock or warrants, thereby depressing the market price of our common stock. Stockholders who wish to participate in these transactions may not have the opportunity to do so.

Furthermore, these provisions could prevent or frustrate attempts by our stockholders to replace or remove our management. These provisions:

- provide for the division of the Board into three classes as nearly equal in size as possible with staggered three-year terms and further limit the removal of directors and the filling of vacancies;
- authorize our Board to issue without stockholder approval blank-check preferred stock that, if issued, could operate as a "poison pill" to dilute the stock ownership of a potential hostile acquirer to prevent an acquisition that is not approved by our Board;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit stockholder action by written consent;
- establish advance notice requirements for stockholder nominations to our Board or for stockholder proposals that can be acted on at stockholder meetings;
- limit who may call stockholder meetings; and
- require the approval of the holders of 75% of the outstanding shares of our capital stock entitled to vote in order to amend certain provisions of our certificate of incorporation.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which may, unless certain criteria are met, prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a prescribed period of time.

General Risk Factors

Conflicts, military actions, terrorist attacks, natural disasters, public health crises, including the occurrence of a contagious disease or illness, cyber-attacks and general instability could adversely affect our business.

Conflicts, military actions, terrorist attacks, natural disasters, public health crises and cyber-attacks have precipitated economic instability and turmoil in financial markets. Instability and turmoil may result in raw material cost increases. In addition, the long-term effects of climate change on general economic conditions and the pharmaceutical manufacturing and distribution industry in particular are unclear, and changes in the supply, demand or available sources of energy and the regulatory and other costs associated with energy production and delivery may affect the availability or cost of goods and services, including raw materials and other natural resources, necessary to run our businesses. The uncertainty and economic disruption resulting from hostilities, military action, acts of terrorism, natural disasters, public health crises or cyber-attacks may impact our operations or those of our suppliers. Accordingly, any conflict, military action, terrorist attack, natural disasters, public health crises or cyber-attack that impacts us or any of our suppliers, could have a material adverse effect on our business, liquidity, prospects, financial condition and results of operations.

War, terrorism, other acts of violence, or natural or manmade disasters may affect the markets in which we operate, our patients and resources required in our research and development activities.

Our business may be adversely affected by political instability, disruption or destruction in a geographic region in which we operate, regardless of cause, including war, terrorism, riot, civil insurrection or social unrest, and natural or manmade disasters, including famine, flood, fire, earthquake, storm or pandemic events and spread of disease and the significant military action against Ukraine by Russia. Such events may affect our business by increasing prices for resources required in our research and development activities or limiting our access to patients for our clinical trials which may delay our progress on one or more of our clinical or preclinical drug product candidates.

Our business and operations may be materially adversely affected in the event of computer system failures or security breaches.

Despite the implementation of security measures, our internal computer systems, and those of our third-party manufacturers, contract research organizations and other third parties on which we rely, are vulnerable to damage from computer viruses, unauthorized access, cyber-attacks, phishing attempts, natural disasters, fire, terrorism, war and telecommunication and electrical failures. If such an event were to occur and interrupt our operations, it could result in a material disruption in our business. For example, the loss of clinical study data from ongoing or planned clinical studies could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications, loss of trade secrets, inappropriate disclosure of confidential or proprietary information, including protected health information or personal data of employees or former employees, lack of access to our clinical data, or disruption of the manufacturing process, we could incur liability and the further development of our drug candidates could be delayed. We may also be vulnerable to cyber-attacks or other malfeasance by hackers. This type of breach of our cybersecurity may compromise our confidential and financial information, adversely affect our business, or result in legal proceedings. Further, these cybersecurity breaches may inflict reputational harm upon us that may result in decreased market value and erode public trust.

Failure to meet investor and stakeholder expectations regarding environmental, social and corporate governance, or “ESG” matters may damage our reputation.

There is an increasing focus from certain investors, employees and other stakeholders concerning ESG matters. Additionally, public interest and legislative pressure related to public companies’ ESG practices continue to grow. If our ESG practices fail to meet investor, employee or other stakeholders’ evolving expectations and standards for responsible corporate citizenship in areas including environmental stewardship, Board of Directors and employee diversity, human capital management, corporate governance and transparency, our reputation, brand, appeal to investors and employee retention may be negatively impacted, which could have a material adverse effect on our business or financial condition.

FORWARD-LOOKING STATEMENTS

This prospectus, together with any accompanying prospectus supplement, includes and incorporates by reference forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act. Examples of our forward-looking statements include:

- our current views with respect to our business strategy, business plan and research and development activities;
- the progress of our product development programs, including clinical testing and the timing of commencement and results thereof;
- our projected operating results, including research and development expenses;
- our ability to identify a strategic partner with the resources to develop iopofosine I 131 (also known as iopofosine or CLR 131) or otherwise continue the development or pursue other strategic options in connection with iopofosine;
- our ability to obtain additional funding via the sale of equity and/or debt securities, a strategic transaction or otherwise;
- our ability to initiate a Phase 1b dose finding study for CLR 121125 and obtain the necessary additional funding for such study;
- our ability to initiate a Phase 1 imaging and dose escalation safety study for CLR 121225 and obtain the necessary additional funding for such study;
- our ability to continue development plans for our clinical and preclinical assets;
- our ability to continue development plans for our Phospholipid Drug Conjugates (PDC)TM;
- our ability to advance our technologies into product candidates;
- our ability to maintain orphan drug designation in the U.S. for iopofosine as a therapeutic for the treatment of multiple myeloma, neuroblastoma, osteosarcoma, rhabdomyosarcoma, Ewing's sarcoma and lymphoplasmacytic lymphoma/Waldenstrom macroglobulinemia, and the expected benefits of orphan drug status;
- any disruptions to our suppliers;
- our current view regarding general economic and market conditions, including our competitive strengths;
- uncertainty and economic instability resulting from conflicts, military actions, terrorist attacks, natural disasters, public health crises, including the occurrence of a contagious disease or illness, cyber-attacks and general instability;
- the future impacts of legislative and regulatory developments in the United States on the pricing and reimbursement of our product candidates;
- our ability to meet the continued listing standards of Nasdaq;
- assumptions underlying any of the foregoing; and
- any other statements that address events or developments that we intend or believe will or may occur in the future.

In some cases, you can identify forward-looking statements by terminology, such as “expects,” “anticipates,” “intends,” “estimates,” “plans,” “believes,” “seeks,” “may,” “should,” “could,” “would” or the negative of such terms or other similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Forward-looking statements also involve risks and uncertainties, many of which are beyond our control. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus.

You should read this prospectus and the documents that we reference herein and therein and have filed as exhibits to the registration statement, of which this prospectus is part, completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus or such prospectus. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus and any accompanying prospectus supplement, and particularly our forward-looking statements, by these cautionary statements.

USE OF PROCEEDS

We estimate that we will receive net proceeds of approximately \$5.0 million from the sale of the securities offered by us in this offering, based on the assumed public offering price of \$7.94 per Class A Unit (the last reported sale price of our common stock on the Nasdaq Capital Market on June 25, 2025), assuming no sales of Class B Units, which, if sold, would reduce the number of Class A Units that we are offering on a one-for-one basis, and after deducting the underwriting commission and estimated offering expenses payable by us. If a holder of Common Warrants elects to exercise the Common Warrants issued in this offering in cash, we may receive additional proceeds from the exercise of the Common Warrants. We cannot predict when or if the Common Warrants will be exercised. It is possible that the Common Warrants may expire and may never be exercised.

A \$1.00 increase (decrease) in the assumed public offering price of \$7.94 per Class A Unit would increase (decrease) the net proceeds to us from this offering by approximately \$0.75 million, assuming that the number of Class A Units offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting commission and estimated offering expenses payable by us and excluding the proceeds, if any, from the cash exercise of the Common Warrants issued pursuant to this offering.

Similarly, a one hundred thousand share increase (decrease) in the number of Class A Units offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the net proceeds to us by approximately \$0.79 million, assuming the assumed public offering price of \$7.94 per Class A Unit remains the same, and after deducting underwriting commission and estimated offering expenses payable by us and excluding the proceeds, if any, from the cash exercise of the Common Warrants issued pursuant to this offering.

We intend to use the net proceeds from this offering for general corporate purposes, including working capital and operating expenses, and to initiate a Phase 1b clinical study of our compound CLR 121125 (CLR 125) in triple-negative breast cancer. Our expected use of net proceeds from this offering represents our current intentions based upon our present plans and business condition. As of the date of this prospectus, we cannot currently allocate specific percentages of the net proceeds that we may use for the purposes specified above, and we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering, or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual use of the net proceeds will vary depending on numerous factors, including our ability to obtain additional financing, the progress, cost and results of our preclinical and clinical development programs, and whether we are able to enter into future licensing or collaboration arrangements. We may find it necessary or advisable to use the net proceeds for other purposes, and our management will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the net proceeds from this offering.

DIVIDEND POLICY

We have never declared nor paid cash dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. We do not intend to pay cash dividends in respect of our common stock in the foreseeable future.

CAPITALIZATION

The following table sets forth cash and capitalization as of March 31, 2025:

- on an actual basis;
- on pro forma as adjusted basis after adjusting for the Reverse Stock Split and the Warrant Inducement;
- on a pro forma as further adjusted basis to give effect to the assumed issuance and sale of shares of Class A Units in this offering at the assumed public offering price of \$7.94 per Class A Unit (but excluding shares of common stock to be issued and any proceeds received upon cash exercise of the Common Warrants) (the last reported sale price of our common stock on the Nasdaq Capital Market on June 25, 2025), assuming (i) no sales of Class B Units, which, if sold, would reduce the number of Class A Units that we are offering on a one-for-one basis, after deducting underwriting commission and estimated offering expenses payable by us and (ii) no exercise of the representative warrants.

The pro forma information set forth in the table below is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

	Actual as of March 31, 2025	Pro Forma as Adjusted as of March 31, 2025	Pro Forma as Further Adjusted as of March 31, 2025
(unaudited)			
Cash and cash equivalents	\$ 13,905,173	\$ 16,155,173	\$ 21,155,173
Stockholders' equity:			
Series E-2 preferred stock	\$ 520,778	\$ 520,778	\$ 520,778
Common stock, \$0.00001 par value; 170,000,000 shares authorized; 46,079,875 shares issued and outstanding actual, 1,812,039 shares issued and outstanding pro forma, 2,567,706 shares issued and outstanding pro forma as adjusted	\$ 461	18	\$ 25
Additional paid-in capital	\$ 261,678,642	\$ 263,929,088	\$ 268,929,082
Accumulated deficit	\$ (253,946,492)	(253,946,492)	\$ (253,946,492)
Total stockholders' equity	\$ 8,253,389	\$ 10,503,392	\$ 15,503,393
Total capitalization	\$ 22,158,562	\$ 26,658,565	\$ 36,658,566

Unless otherwise indicated, the number of shares of common stock to be outstanding immediately after this offering is based on 1,535,996 shares of common stock outstanding as of March 31, 2025, which is adjusted to 1,812,039 to give effect to 276,043 shares that were issued pursuant to the Warrant Inducement, and which excludes:

- any shares of common stock issuable upon the exercise of the Underwriters' over-allotment option;
- any shares of common stock issuable upon the exercise of Pre-Funded Warrants issued in this offering;
- any shares of common stock issuable upon the exercise of Common Warrants issued in this offering;
- any shares of common stock issuable upon the exercise of the representative warrants issued as compensation to the representative of the underwriters in this offering;
- an aggregate of 211,816 shares of common stock issuable upon the exercise of outstanding stock options issued to employees, directors and consultants;
- an aggregate of 13,040 shares of common stock issuable upon the conversion of outstanding shares of Series E-2 preferred stock;
- an aggregate of 3,704 shares of common stock issuable upon the conversion of outstanding shares of Series D preferred stock; and
- an aggregate of 522,011 additional shares of common stock reserved for issuance under outstanding warrants having expiration dates between June 2025 and July 2029, and exercise prices ranging from \$58.80 to \$362.250 per share.

DILUTION

If you invest in our common stock in this offering, your interest will be diluted to the extent of the difference between the public offering price per Class A Unit and the net tangible book value per share of our common stock upon consummation of this offering. Dilution results from the fact that the public offering price is substantially in excess of the book value per share attributable to the existing stockholders for the presently outstanding stock.

The historical net tangible book value of our common stock, as adjusted for the Reverse Stock Split, as of March 31, 2025 was approximately \$7.7 million, or approximately \$5.03 per share of common stock. Historical net tangible book value (deficit) per share is determined by dividing the number of outstanding shares of common stock into its total tangible assets (total assets less intangible assets) less total liabilities and preferred shares, if any.

Subsequent to March 31, 2025, among other things, we entered into the Warrant Inducement where we issued an aggregate of 8,281,322 shares of common stock (on a pre-Reverse Stock Split basis).

On a pro forma as adjusted basis after giving effect to the Warrant Inducement and the Reverse Stock Split, our pro forma net tangible book value would have been \$10.0 million, or approximately \$5.51 per share of common stock

Investors purchasing securities in this offering will incur immediate and substantial dilution. After giving effect to the sale of securities offered in this offering assuming a public offering price of \$7.94 per Class A Unit, the closing price of our common stock on the Nasdaq Capital Market on June 25, 2025) (but excluding any shares of common stock to be issued and any proceeds to be received upon cash exercise of the Common Warrants, if any), and after deducting the underwriting commission and estimated offering costs payable by us, our pro forma as further adjusted net tangible book value as of March 31, 2025 would have been approximately \$15.0 million, or approximately \$6.17 per share of common stock. This represents an immediate increase in net tangible book value of \$0.33 per share to existing stockholders, and an immediate dilution in the as adjusted net tangible book value of \$2.10 per share to investors purchasing shares of our common stock and Common Warrants in this offering.

The following table illustrates this per share dilution:

Assumed public offering price per Class A Unit		\$	7.94
Pro forma as adjusted net tangible book value per share as of March 31, 2025	\$	5.51	
Increase in pro forma as adjusted net tangible book value per share attributable to this offering		0.33	
Pro forma as further adjusted net tangible book value as of March 31, 2025 (giving effect to this offering)			5.84
Dilution per share to investors		\$	2.10

The dilution information discussed above is illustrative only and will change based on the actual public offering price and other terms of this offering determined at pricing. A \$1.00 increase or decrease in the assumed public offering price of \$7.94 per Class A Unit would increase or decrease the as adjusted net tangible book value per share by approximately \$0.20 and \$0.23 per share, respectively, and the dilution per share to investors participating in this offering by approximately \$2.90 and \$1.33 per share, respectively, assuming the number of securities offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting commission and estimated offering expenses payable by us.

The discussion and table above assume (i) no sales of Class B Units, which, if sold, would reduce the number of Class A Units that we are offering on a one-for-one basis, (ii) no exercise of Common Warrants sold in this offering, and (iii) no exercise of the representative warrants.

To the extent that stock options are exercised or new stock options are issued under our equity incentive plans, there will be further dilution to investors purchasing securities in this offering. In addition, we will need to raise additional capital because of market conditions and strategic considerations. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

DESCRIPTION OF SECURITIES WE ARE OFFERING

The following summary of certain terms and provisions of the securities that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the underlying securities, the forms of which are filed as exhibits to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the forms of securities for a complete description of the terms and conditions.

Units

Class A Units - We are offering up to 755,667 Class A Units with each Class A Unit consisting of (i) one (1) share of our common stock and (ii) one (1) Common Warrant to purchase one (1) share of our common stock.

Class B Units - We are also offering to each purchaser whose purchase of Class A Units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if the purchaser so chooses, up to 755,667 Class B Units in lieu of Class A Units. Each Class B Unit consists of: (i) one (1) Pre-Funded Warrant and (ii) one (1) Common Warrant to purchase one (1) share of our common stock.

The Common Warrants included in the Class A Units and Class B Units are identical.

The shares of common stock in the Class A Units or the Pre-Funded Warrants in the Class B Units, as applicable, and the accompanying Common Warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance.

Common Stock

Voting. Holders of our common stock are entitled to one vote per share held of record on all matters to be voted upon by our stockholders. Our common stock does not have cumulative voting rights. Persons who hold a majority of the outstanding common stock entitled to vote on the election of directors can elect all of the directors who are eligible for election.

Dividends. Subject to preferences that may be applicable to the holders of any outstanding shares of our preferred stock, the holders of our common stock are entitled to receive such lawful dividends as may be declared by our Board of Directors.

Liquidation and Dissolution. In the event of our liquidation, dissolution or winding up, and subject to the rights of the holders of any outstanding shares of our preferred stock, the holders of shares of our common stock will be entitled to receive pro rata all of our remaining assets available for distribution to our stockholders.

Other Rights and Restrictions. Our Certificate of Incorporation prohibits us from granting preemptive rights to any of our stockholders.

Description of Common Warrants

Form. Pursuant to a warrant agency agreement between us and Equiniti Trust Company, LLC, as warrant agent, the Common Warrants will be issued in book-entry form and shall initially be represented only by one or more global Common 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 Common Warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full in immediately available funds for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as described below). A holder (together with its affiliates) may not exercise any portion of the Common 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 common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's Common Warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Common Warrants. Holders of the Common Warrants may also elect prior to the issuance of the Common Warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock. No fractional shares of common stock will be issued in connection with the exercise of a Common 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 up to the nearest whole share.

Duration and Exercise Price. The exercise price per whole share of our common stock purchasable upon the exercise of the Common Warrants is \$ per share. The Common Warrants will be immediately exercisable upon issuance and may be exercised until the five (5) year anniversary from the date of issuance. The exercise price of the Common Warrants is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and upon any distributions of assets, including cash, stock or other property to our stockholders.

Cashless Exercise. If, at any time after the issuance of the Common Warrants, such holder exercises its Common Warrants and a registration statement registering the issuance of the shares of common stock underlying the Common Warrants under the Securities Act is not then effective or available (or a prospectus is not available for the resale of shares of common stock underlying the Common Warrants), 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 shall instead receive upon such exercise (either in whole or in part) only the net number of shares of common stock determined according to a formula set forth in the Common Warrants. Notwithstanding anything to the contrary, in the event we do not have or maintain an effective registration statement, there are no circumstances that would require us to make any cash payments or net cash settle the Common Warrants to the holders.

Transferability. Subject to applicable laws, the Common Warrants may be offered for sale, sold, transferred or assigned at the option of the holder upon surrender of the Common Warrant to us together with the appropriate instruments of transfer.

Exchange Listing. We do not plan on applying to list the Common Warrants on the Nasdaq Capital Market, any other national securities exchange or any other nationally recognized trading system. Without an active trading market, the liquidity of the Common Warrants will be limited.

Fundamental Transactions. In the event of a fundamental transaction, as described in the Common Warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of the voting power represented by our outstanding securities with voting rights, on an as converted basis, the holders of the Common Warrants will be entitled to receive upon exercise of the Common Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised Common Warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the Common Warrants. Additionally, as more fully described in the Common Warrant, in the event of certain fundamental transactions, the holders of the Common Warrants may be entitled to receive consideration in an amount equal to the Black Scholes value of the Common Warrants.

Rights as a Stockholder. Except by virtue of such holder's ownership of shares of our common stock, the holder of a Common Warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the Common Warrant.

Description of Pre-Funded Warrants

Form. Pursuant to a warrant agency agreement between us and Equiniti Trust Company, LLC, as warrant agent, the Pre-Funded 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 Pre-Funded Warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full in immediately available funds for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as described below). A holder (together with its affiliates) may not exercise any portion of the Pre-Funded 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 common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's Pre-Funded Warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrants. Purchasers of Pre-Funded Warrants in this offering may also elect prior to the issuance of the Pre-Funded Warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock. No fractional shares of common stock will be issued in connection with the exercise of a Pre-Funded 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 up to the nearest whole share.

Duration and Exercise Price. The exercise price per whole share of our common stock purchasable upon the exercise of the Pre-Funded Warrants is \$0.00001 per share of common stock. The Pre-Funded Warrants will be immediately exercisable and may be exercised at any time until the Pre-Funded Warrants are exercised in full. The exercise price of the Pre-Funded Warrants is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and upon any distributions of assets, including cash, stock or other property to our stockholders.

Cashless Exercise. If, at any time after the holder's purchase of Pre-Funded Warrants, such holder exercises its Pre-Funded Warrants, 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 shall instead receive upon such exercise (either in whole or in part) only the net number of shares of common stock determined according to a formula set forth in the Pre-Funded Warrants.

Transferability. Subject to applicable laws, the Pre-Funded Warrants may be offered for sale, sold, transferred or assigned at the option of the holder upon surrender of the Pre-Funded Warrant to us together with the appropriate instruments of transfer.

Exchange Listing. We do not plan on applying to list the Pre-Funded Warrants on the Nasdaq Capital Market, any other national securities exchange or any other nationally recognized trading system. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.

Fundamental Transactions. In the event of a fundamental transaction, as described in the Pre-Funded Warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of the voting power represented by our outstanding securities with voting rights, on an as converted basis, the holders of the Pre-Funded Warrants will be entitled to receive upon exercise of the Pre-Funded Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Pre-Funded Warrants immediately prior to such fundamental transaction.

Rights as a Stockholder. Except by virtue of such holder's ownership of shares of our common stock, the holder of a Pre-Funded Warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the Pre-Funded Warrant.

Description of Representative Warrants

Form. The representative warrants will be issued in certificated form by the Company.

Exercisability. The representative warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full in immediately available funds for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as described below). A holder (together with its affiliates) may not exercise any portion of the representative 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 common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's representative warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the representative warrants. Holders of the representative warrants may also elect prior to the issuance of the representative warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock. No fractional shares of common stock will be issued in connection with the exercise of a representative 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 up to the nearest whole share.

Duration and Exercise Price. The exercise price per whole share of our common stock purchasable upon the exercise of the representative warrants is 155% of the public offering price per Class A Unit sold in this offering. The representative warrants will be immediately exercisable upon issuance and may be exercised until the five (5) year anniversary from the commencement of sales of this offering. The exercise price of the representative warrants is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and upon any distributions of assets, including stock or other property to our stockholders.

Cashless Exercise. If, at any time after the issuance of the representative warrants, such holder exercises its representative warrants and a registration statement registering the issuance of the shares of common stock underlying the representative warrants under the Securities Act is not then effective or available (or a prospectus is not available for the resale of shares of common stock underlying the representative warrants), 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 shall instead receive upon such exercise (either in whole or in part) only the net number of shares of common stock determined according to a formula set forth in the representative warrants. Notwithstanding anything to the contrary, in the event we do not have or maintain an effective registration statement, there are no circumstances that would require us to make any cash payments or net cash settle the representative warrants to the holders.

Transferability. The representative warrants will be subject to FINRA Rule 5110(e)(1) in that, except as otherwise permitted by FINRA rules, for a period of 180 days from the commencement of sales of this offering, the representative warrants shall not be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the securities by any person except as permitted by FINRA Rule 5110(e)(2). In addition, subject to applicable laws, the representative warrants may be offered for sale, sold, transferred or assigned at the option of the holder upon surrender of the representative warrant to us together with the appropriate instruments of transfer after the initial 180 day period from the commencement of sales of the offering.

Exchange Listing. We do not plan on applying to list the representative warrants on the Nasdaq Capital Market, any other national securities exchange or any other nationally recognized trading system. Without an active trading market, the liquidity of the representative warrants will be limited.

Fundamental Transactions. In the event of a fundamental transaction, as described in the representative warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of the voting power represented by our outstanding securities with voting rights, on an as converted basis, the holders of the representative warrants will be entitled to receive upon exercise of the representative warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the representative warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the representative warrants. Additionally, as more fully described in the representative warrant, in the event of certain fundamental transactions, the holders of the representative warrants will be entitled to receive consideration in an amount equal to the Black Scholes value of the representative warrants on the date of consummation of such transaction.

Rights as a Stockholder. Except by virtue of such holder's ownership of shares of our common stock, the holder of a representative warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the representative warrant.

Anti-Takeover Effect of Certain Certificate of Incorporation and By-Law Provisions

Provisions of our Certificate of Incorporation and our amended and restated by-laws (our "By-Laws") could make it more difficult to acquire us by means of a merger, tender offer, proxy contest, open market purchases, removal of incumbent directors and otherwise. These provisions, which are summarized below, are expected to discourage types of coercive takeover practices and inadequate takeover bids and to encourage persons seeking to acquire control of us to first negotiate with us. We believe that the benefits of increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging takeover or acquisition proposals because negotiation of these proposals could result in an improvement of their terms.

Authorized but Unissued Stock. We have shares of common stock and preferred stock available for future issuance, in some cases, without stockholder approval. We may issue these additional shares for a variety of corporate purposes, including public offerings to raise additional capital, corporate acquisitions, stock dividends on our capital stock or equity compensation plans. The existence of unissued and unreserved common stock and preferred stock may enable our Board of Directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us, thereby protecting the continuity of our management. In addition, if we issue preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation.

Amendments to By-Laws. Our By-Laws are subject to alternation or repeal, and new by-laws may be made, by a majority of the voting power of all then outstanding shares of capital stock entitled to vote generally in the election of directors, voting together a single class. Additionally, our By-Laws provide the Board of Directors with the power to make, adopt, alter, amend and repeal, from time to time, our By-Laws, provided, however, that the stockholders entitled to vote with respect to amendments to our By-Laws may alter, amend or repeal By-Laws made by the Board of Directors.

Classification of Board of Directors; Removal of Directors; Vacancies. Our Certificate of Incorporation provide for the division of the Board of Directors into three classes as nearly equal in size as possible with staggered three-year terms; that directors may be removed only for cause by the affirmative vote of the holders of two-thirds of our shares of capital stock entitled to vote; and that any vacancy on the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the Board of Directors, may be filled only by the vote of a majority of the directors then in office. The limitations on the removal of directors and the filling of vacancies could have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from acquiring, control of us. Our Certificate of Incorporation requires the affirmative vote of the holders of at least 75% of our shares of capital stock issued and outstanding and entitled to vote to amend or repeal any of these provisions.

Notice Periods for Stockholder Meetings. Our By-Laws provide that for business to be brought by a stockholder before an annual meeting of stockholders, the stockholder must give written notice to the corporation not later than the close of business on the 90th day, or earlier than the 120th day prior to the one year anniversary of the date of the annual meeting of stockholders of the previous year; provided, however, that in the event that the annual meeting of stockholders is called for a date that is not within 30 days prior to, or more than 60 days after, such anniversary date, notice by the stockholder must be received not later than 120 days prior to such annual meeting and not later than the close of business on the 90th day prior to such annual meeting and the 10th day following the day on which the corporation's notice of the date of the meeting is first given or made to the stockholders or disclosed to the general public. Our By-Laws also provide that the Board of Directors or the chair of such meeting may postpone, reschedule or cancel any annual meeting of stockholders previously scheduled by the Board of Directors and in no event shall the adjournment, recess, postponement, judicial stay or rescheduling of an annual meeting commence a new time period, or extend any time period, for the giving of notice.

Stockholder Action; Special Meetings. Our Certificate of Incorporation provides that stockholder action may not be taken by written action in lieu of a meeting and provides special meetings of the stockholders may only be called by the chair of the Board of Directors, the president or by our Board of Directors. These provisions could have the effect of delaying until the next stockholders' meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions may also discourage another person or entity from making a tender offer for our common stock, because that person or entity, even if it acquired a majority of our outstanding voting securities, would be able to take action as a stockholder only at a duly called stockholders' meeting, and not by written consent. Our Certificate of Incorporation requires the affirmative vote of the holders of at least 75% of our shares of capital stock issued and outstanding and entitled to vote to amend or repeal the provisions relating to prohibition on action by written consent and the calling of a special meeting of stockholders.

Nominations. Our By-Laws provide that nominations for election of directors may be made only by (i) the Board of Directors or a committee appointed by the Board of Directors; or (ii) a stockholder entitled to vote on director election, if the stockholder provides notice to the Secretary of the Company presented not less than 90 days nor more than 120 days prior to the anniversary of the last annual meeting (subject to the limited exceptions set forth in the bylaws). These provisions may deter takeovers by requiring that any stockholder wishing to conduct a proxy contest have its position solidified well in advance of the meeting at which directors are to be elected and by providing the incumbent Board of Directors with sufficient notice to allow them to put an election strategy in place. Our bylaws also provide that stockholders seeking to present proposals before a meeting of stockholders to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and specifies requirements as to the form and content of a stockholder's notice.

Choice of Forum. Our bylaws provides that the Court of Chancery of the state of Delaware shall be the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty;
- any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our restated certificate, or our amended and restated bylaws; or
- any action asserting a claim against us that is governed by the internal affairs doctrine.

The provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims.

To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our bylaws provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act.

While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our Certificate of Incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive-forum provision in our bylaws to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

Our bylaws further provides that the federal district courts of the United States of America shall be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

No Cumulative Voting. Delaware General Corporation Law provides that stockholders are not entitled to the right to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Our Certificate of Incorporation and bylaws do not provide for cumulative voting.

Concentration of Ownership

Our executive officers, directors and holders of five percent or more of our outstanding common stock, together with their respective affiliates, beneficially own or control a significant portion of the outstanding shares of the Company. Accordingly, these stockholders will have substantial influence over the outcome of a corporate action of the Company requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of the Company's assets or any other significant corporate transaction. These stockholders may also exert influence in delaying or preventing a change in control of the Company, even if such change in control would benefit the other stockholders of the Company.

Listing

Our common stock is currently traded on the Nasdaq Capital Market under the symbol "CLRB."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Equiniti Trust Company, LLC.

UNDERWRITING

We are offering the securities described in this prospectus through the underwriters named below. We have entered into an underwriting agreement dated , 2025 with Ladenburg Thalmann & Co. Inc., as the representative of the underwriters in this offering. Subject to the terms and conditions of the underwriting agreement, the underwriters have agreed to purchase the number of our securities set forth opposite its name below.

Underwriters	Number of Class A Units	Number of Class B Units
Ladenburg Thalmann & Co. Inc.		
Totals		

A copy of the underwriting agreement has been filed as an exhibit to the registration statement of which this prospectus is part.

We have been advised by the underwriters that they propose to offer the Class A Units and Class B Units, if any, directly to the public at the public offering prices set forth on the cover page of this prospectus. Any securities sold by the underwriters to securities dealers will be sold at the public offering price less a selling concession not in excess of \$ per Class A Unit.

The underwriting agreement provides that the underwriters' obligation to purchase the securities we are offering is subject to conditions contained in the underwriting agreement.

No action has been taken by us or the underwriters that would permit a public offering of the securities in any jurisdiction outside the United States where action for that purpose is required. None of our securities included in this offering may be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sales of any of the securities offering hereby 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 who receive this prospectus are advised to inform themselves about and to observe any restrictions relating to this offering of securities and the distribution of this prospectus. This prospectus is neither an offer to sell nor a solicitation of any offer to buy the securities in any jurisdiction where that would not be permitted or legal.

The underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

Underwriting Discount and Expenses

The following table summarizes the underwriting discount and commission to be paid to the underwriters by us.

	Per Class A Unit	Per Class B Unit	Total Without Over- Allotment	Total With Full Over- Allotment
Public offering price (1)	\$	\$	\$	\$
Underwriting discounts and commissions (2)(3)	\$	\$	\$	\$
Proceeds to us, before expenses	\$	\$	\$	\$

(1)The public offering price and underwriting discount corresponds, in respect of the securities of (i) a public offering price per Class A Unit of \$ (\$ net of the underwriting discount) and (ii) a public offering price per Class B Unit of \$ (\$ net of the underwriting discount).

(2)We have also agreed to reimburse the accountable expenses of the representative, including a pre-closing expense allowance of up to a maximum of \$50,000 and an additional closing expense allowance up to a maximum of \$110,000. We paid an advance expense deposit of \$25,000 to the representative for the representative's anticipated accountable expenses. Any expense deposits will be returned to us to the extent the representative's accountable expenses are not actually incurred in accordance with FINRA Rule 5110(g)(4)(A).

(3)We have granted a forty-five day over-allotment option to the underwriters to purchase up to an aggregate of 113,350 additional shares of common stock and/or additional Common Warrants to purchase up to 113,350 additional shares of common stock at the assumed public offering prices per security set forth above less the underwriting discounts and commissions solely to cover over-allotments, if any.

We estimate the total expenses payable by us for this offering to be approximately \$1,000,000, which amount includes (i) the underwriting discount of approximately \$480,000, (ii) reimbursement of the accountable expenses of the underwriters, including the legal fees of the representative of the underwriters, in an amount not to exceed \$160,000 and (iii) other estimated company expenses of approximately \$360,000, which includes legal, accounting, printing costs and various fees associated with the registration and listing of our securities.

The securities we are offering are being offered by the underwriters subject to certain conditions specified in the underwriting agreement.

Over-allotment Option

We have granted to the underwriters an option exercisable not later than forty-five days after the date of this prospectus to purchase up to an aggregate of an additional 113,350 shares of common stock and/or additional Common Warrants to purchase up to an additional 113,350 shares of common stock, or any combination thereof, as determined by the underwriters, at the public offering price per security set forth on the cover page hereto less the underwriting discounts and commissions. The underwriters may exercise the option solely to cover over-allotments, if any, made in connection with this offering. If any additional shares of common stock and/or Common Warrants are sold, the underwriters will offer such securities on the same terms as those on which the other securities are being offered.

Representative Warrants

We have agreed to issue certain common stock purchase warrants (“representative warrants”) to the representative, or its designees, of the underwriters, upon the closing of this offering, which entitle it to purchase up to 45,340 shares of common stock, or 52,141 shares of common stock assuming the exercise of the over-allotment option in full. The representative warrants will have an exercise price equal to \$ per share of common stock, will be exercisable immediately upon issuance, at any time and from time to time, in whole or in part, during the five-year period commencing from the commencement of sales of this offering. The representative warrants and the shares of common stock underlying the representative warrants are being registered on the registration statement of which this prospectus is a part. See the form of representative warrant for a more complete description of the terms of such representative warrants which has been filed as an exhibit to the registration statement of which this prospectus is part.

Listing

Our shares of common stock are listed on The Nasdaq Capital Market under the symbol “CLRB.”

The last reported sale price of our shares of common stock on June 25, 2025, was \$7.94 per share. The final public offering price will be determined between us, the underwriters and the investors in the offering, and may be at a discount to the current market price of our common stock. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price. There is no established public trading market for the Common Warrants or Pre-Funded Warrants, and we do not expect such markets to develop. In addition, we do not intend to apply for a listing of the Common Warrants or Pre-Funded Warrants on any national securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Common Warrants and Pre-Funded Warrants will be limited.

Lock-up Agreements

Each of our officers, directors and each of their respective affiliates and associated partners, and certain affiliated stockholders have agreed with the underwriters to be subject to a lock-up period of sixty (60) days following the closing of this offering, subject to certain exceptions. This means that, during the applicable lock-up period, such persons may not offer for sale, contract to sell, sell, distribute, grant any option, right or warrant to purchase, pledge, hypothecate or otherwise dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, shares of our common stock. Certain limited transfers are permitted during the lock-up period if the transferee agrees to these lock-up restrictions. We have also agreed, in the underwriting agreement, to similar lock-up restrictions on the (i) issuance and sale of our equity securities from the date of this prospectus for a period of sixty (60) days following the closing of this offering and (ii) entry into certain “variable rate transactions” from the date of this prospectus for a period of one hundred and eighty (180) days following the closing of this offering, in each case subject to certain exceptions. The representative may, in its sole discretion and without notice, waive the terms of any of these lock-up agreements.

Right of First Refusal

Pursuant to our investment banking agreement with the representative, from the twelve (12) months following the date of such closing and expiration of the term, should we propose to effect an additional financing, we have agreed to offer the representative the opportunity to participate as sole bookrunner, exclusive placement agent or exclusive sales agent or financial advisor in respect of such financing.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Equiniti Trust Company, LLC.

Determination of Offering Price

Our common stock is currently traded on The Nasdaq Capital Market under the symbol “CLRB.” On June 25, 2025, the closing price of our common stock was \$7.94 per share. We do not intend to apply for listing of the Common Warrants or Pre-Funded Warrants on any securities exchange or other trading system.

The public offering price of the securities offered by this prospectus will be determined by negotiation between us and the underwriters. Among the factors that will be considered in determining the public offering price:

- our history and our prospects;
- the industry in which we operate;
- our past and present operating results;
- the previous experience of our executive officers; and
- the general condition of the securities markets at the time of this offering.

The public offering price stated on the cover page of this prospectus should not be considered an indication of the actual value of the securities sold in this offering. That price is subject to change as a result of market conditions and other factors, and we cannot assure you that the shares of common stock underlying the Class A Units, Pre-Funded Warrants (contained in the Class B Units) and Common Warrants sold in this offering can be resold at or above the public offering price.

Stabilization, Short Positions and Penalty Bids

The underwriters may engage in syndicate covering transactions stabilizing transactions and penalty bids or purchases for the purpose of pegging, fixing or maintaining the price of our common stock:

- Syndicate covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. Such a naked short position would 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 the offering.

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specific maximum.

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

These syndicate covering transactions, stabilizing transactions, and penalty bids may have the effect of raising or maintaining the market prices of our securities or preventing or retarding a decline in the market prices of our securities. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on The Nasdaq Capital Market, in the over-the-counter market or on any other trading market and, if commenced, may be discontinued at any time.

In connection with this offering, the underwriters also may engage in passive market making transactions in our common stock in accordance with Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of the distribution. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for that security. However, if all independent bids are lowered below the passive market maker's bid that bid must then be lowered when specific purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, 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 prices of our securities. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transactions, once commenced will not be discontinued without notice.

Other Relationships

From time to time, certain of the underwriters and their affiliates may provide in the future, various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which they will receive customary fees and commissions. In addition, Ladenburg Thalmann & Co. Inc. acted as the exclusive placement agent in connection with the Warrant Inducement.

Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including certain liabilities arising under the Securities Act, or to contribute to payments that the underwriters may be required to make for these liabilities.

Electronic Distribution

A prospectus in electronic format may be made available on the websites maintained by the underwriters, if any, participating in this offering and the underwriters may distribute prospectuses electronically. Other than the prospectus in electronic format, the information on these websites is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved or endorsed by us or the underwriters, and should not be relied upon by investors.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS

The following is a general discussion of the material U.S. federal income considerations applicable to the ownership and disposition of shares of our common stock, Common Warrants and Pre-Funded Warrants acquired in this offering. This discussion is for general information only and is not tax advice. Accordingly, all prospective holders of our common stock, Common Warrants and Pre-Funded Warrants should consult their own tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our common stock, Common Warrants and Pre-Funded Warrants. This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended (the “Code”), existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus, all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any change could alter the tax consequences described in this prospectus. We assume in this discussion that each holder holds shares of our common stock, Common Warrants and Pre-Funded Warrants as capital assets within the meaning of Section 1221 of the Code (generally property held for investment).

This discussion does not address all aspects of U.S. federal income taxation that may be relevant to a particular holder in light of that holder’s individual circumstances, does not address the alternative minimum or Medicare contribution taxes, and does not address any aspects of U.S. state, local or non-U.S. taxes or any U.S. federal taxes other than income tax. This discussion also does not consider any specific facts or circumstances that may apply to a holder and does not address aspects of U.S. federal income taxation that may be applicable to holders that are subject to special tax rules, including without limitation:

- insurance companies;
- tax-exempt organizations;
- financial institutions;
- brokers or dealers in securities;
- regulated investment companies;
- real estate investment trusts;
- pension plans, individual retirement accounts and other tax deferred accounts;
- persons that mark their securities to market;
- controlled foreign corporations;
- passive foreign investment companies;
- “dual resident” corporations;
- persons that receive our common stock, Common Warrants or Pre-Funded Warrants as compensation for the performance of services;
- owners that hold our common stock, Common Warrants or Pre-Funded Warrants as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment;
- owners that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below);
- persons that have a functional currency other than the U.S. dollar; and
- certain U.S. expatriates.

In addition, this discussion does not address the tax treatment of partnerships or other pass-through entities for U.S. federal income tax purposes, or persons who hold our common stock, Common Warrants or Pre-Funded Warrants through partnerships or other pass-through entities for U.S. federal income tax purposes. A partner in a partnership or other pass-through entity that will hold our common stock, Common Warrants or Pre-Funded Warrants should consult his, her or its own tax advisor regarding the tax consequences of acquiring, holding and disposing of our common stock, Common Warrants or Pre-Funded Warrants through a partnership or other pass-through entity, as applicable.

As used in this prospectus, the term “U.S. holder” means a beneficial owner of common stock, Common Warrants or Pre-Funded Warrants that is for U.S. federal income tax purposes:

- a citizen or individual resident of the United States;
- a corporation (or other entity properly classified as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state within the United States, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if (i) a U.S. court is able to exercise primary supervision over the trust’s administration and one or more “United States persons” (as defined in the Code) have the authority to control all substantial decisions of the trust, or (ii) in the case of a trust that was treated as a domestic trust under the laws in effect before 1997, a valid election is in place under applicable U.S. Treasury regulations to treat such trust as a domestic trust.

The term “non-U.S. holder” means any beneficial owner of common stock, Common Warrants or Pre-Funded Warrants that is not a U.S. holder and is not a partnership or other entity properly classified as a partnership for U.S. federal income tax purposes. For the purposes of this prospectus, U.S. holders and non-U.S. holders are referred to collectively as “holders.”

There can be no assurance that the Internal Revenue Service (the “IRS”) will not challenge one or more of the tax consequences described herein. We have not obtained, nor do we intend to obtain, a ruling from the IRS with respect to the U.S. federal income tax consequences of the purchase, ownership or disposition of our common stock, Common Warrants or Pre-Funded Warrants.

Allocation of Purchase Price of the Class A Units and Class B Units

Each Class A Unit should be treated for U.S. federal income tax purposes as an “investment unit” consisting of one share of our common stock and one Common Warrant. Each Class B Unit should be treated for U.S. federal income tax purposes as an investment unit consisting of one Pre-Funded Warrant and one Common Warrant. The purchase price for each investment unit will be allocated between these components in proportion to their relative fair market values at the time the investment unit is purchased by the holder. This allocation will establish a holder’s initial tax basis for U.S. federal income tax purposes in his, her or its share of common stock (or, in lieu of common stock, Pre-Funded Warrant) and Common Warrant included in each investment unit. We will not be providing holders with such allocation, and it is possible that different holders will reach different determinations regarding such allocation. A holder’s allocation of purchase price between each share of common stock (or, in lieu of common stock, each Pre-Funded Warrant) and the accompanying Common Warrant is not binding on the IRS or the courts, and no assurance can be given that the IRS or the courts will agree with a holder’s allocation.

Accordingly, each prospective holder should consult his, her or its own tax advisor with respect to the allocation, and the risks associated with such allocation, of the holder’s purchase price for the investment unit between our shares of common stock (or, in lieu of common stock, Pre-Funded Warrants) and Common Warrants.

Treatment of Pre-Funded Warrants

Although it is not entirely free from doubt, a Pre-Funded Warrant should be treated as a share of our common stock for U.S. federal income tax purposes and a holder of Pre-Funded Warrants should generally be taxed in the same manner as a holder of common stock, as described below. Accordingly, no gain or loss should be recognized upon the exercise of a Pre-Funded Warrant and, upon exercise, the holding period of a Pre-Funded Warrant should carry over to the share of common stock received. Similarly, the tax basis of the Pre-Funded Warrant should carry over to the share of common stock received upon exercise, increased by the exercise price of \$0.00001 per share. Each holder should consult his, her or its own tax advisor regarding the risks associated with the acquisition of Pre-Funded Warrants pursuant to this offering (including potential alternative characterizations). The balance of this discussion generally assumes that the characterization described above will be respected for U.S. federal income tax purposes.

Tax Consequences to U.S. Holders

Exercise or Expiration of Common Warrants

Subject to the discussion below with respect to the cashless exercise of a Common Warrant, a U.S. holder will not recognize income, gain or loss on the exercise of a Common Warrant. A U.S. holder's tax basis in the common stock received upon the exercise of a Common Warrant will equal the sum of (i) the initial tax basis of the Common Warrant exercised (as determined pursuant to the rules discussed above under "Allocation of Purchase Price of the Class A Units and Class B Units") and (ii) the exercise price of the Common Warrant. The U.S. holder's holding period for the common stock received upon exercise of a Common Warrant will begin on the day after such exercise (or possibly on the date of exercise) and will not include the period during which the U.S. holder held the Common Warrant.

The tax consequences of a cashless exercise of a Common Warrant are not clear under current U.S. tax law. 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 case, a U.S. holder's basis in the common stock received in connection with the cashless exercise would equal the U.S. holder's basis in the Common Warrants surrendered in connection with the cashless exercise. If the cashless exercise was not a realization event, it is unclear whether a U.S. holder's holding period for the common stock would be treated as commencing on the date of exercise or on the day following the date of exercise. If the cashless exercise were treated as a recapitalization, the holding period of the common stock would include the holding period of the Common Warrants surrendered in connection with the cashless exercise.

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 Common Warrants having an aggregate fair market value equal to the exercise price for the total number of Common Warrants to be exercised. The U.S. holder would recognize capital gain or loss in an amount equal to the difference between the amount deemed realized (*i.e.*, the exercise price for the Common Warrants exercised) and the U.S. holder's tax basis in the Common Warrants deemed surrendered to pay the exercise price. In this case, a U.S. holder's tax basis in the common stock received would equal the sum of the U.S. holder's initial investment in the exercised Common Warrants and the exercise price for such Common Warrants. It is unclear whether a U.S. holder's holding period for the common stock would commence on the date of exercise of the Common Warrants or the day following the date of exercise of the Common Warrants.

Due to the absence of authority on the U.S. federal income tax treatment of a cashless exercise, there can be no assurance which, if any, of the alternative approaches described above would be adopted by the IRS or a court of law. Accordingly, U.S. holders should consult their own tax advisors regarding the tax consequences of a cashless exercise.

If a Common Warrant is allowed to lapse unexercised, a U.S. holder generally will recognize a capital loss equal to such holder's tax basis in the Common Warrant. The deductibility of capital losses is subject to significant limitations.

Distributions on Our Common Stock

As discussed above under “Dividend Policy,” we do not currently expect to make distributions on our common stock. In the event that we do make distributions on our common stock to a U.S. holder, those distributions generally 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. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the U.S. holder’s investment, up to such U.S. holder’s tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in “—Sale, Exchange or Other Taxable Disposition of Our Common Stock or Warrants.” Dividends paid by us generally will be eligible for the reduced rates of tax for qualified dividend income allowed to individual U.S. holders and for the dividends received deduction allowed to corporate U.S. holders, in each case assuming that certain holding period and other requirements are satisfied.

Constructive Distributions on Our Warrants

Under Section 305 of the Code, an adjustment to the number of shares of common stock that will be issued on the exercise of our warrants (whether Pre-Funded Warrants or Common Warrants), or an adjustment to the exercise price of such warrants, may be treated as a constructive distribution to a U.S. holder of the warrants if, and to the extent that, such adjustment has the effect of increasing such U.S. holder’s proportionate interest in our “earnings and profits” or assets, depending on the circumstances of such adjustment (for example, if such adjustment is to compensate for a distribution of cash or other property to holders of our common stock). Adjustments to the exercise price of a warrant made pursuant to a bona fide reasonable adjustment formula that has the effect of preventing dilution of the interest of the holder of the warrant should generally not result in a constructive distribution. Any constructive distributions generally would be subject to the tax treatment described above under “—Distributions on Our Common Stock.”

Sale, Exchange or Other Taxable Disposition of Our Common Stock or Warrants

Upon the sale, exchange, or other taxable disposition of our common stock or warrants (whether Pre-Funded Warrants or Common Warrants), a U.S. holder will recognize gain or loss equal to the difference between the amount realized upon the disposition and the U.S. holder’s tax basis in the common stock or warrants sold or exchanged. Any gain or loss generally will be capital gain or loss, and will be long-term capital gain or loss if the U.S. holder’s holding period for the common stock or Common Warrants exceeded one year at the time of the disposition. Certain U.S. holders (including individuals) are currently eligible for preferential rates of U.S. federal income taxation in respect of long-term capital gains. The deductibility of capital losses is subject to significant limitations.

Information Reporting and Backup Withholding

In general, information reporting requirements may apply to distributions (whether actual or constructive) paid to a U.S. holder on our common stock or warrants, and to the proceeds of the sale, exchange or other disposition of our common stock and warrants, unless the U.S. holder is an exempt recipient. Backup withholding will apply to such payments if the U.S. holder fails to provide a taxpayer identification number, a certification of exempt status or has been notified by the IRS that it is subject to backup withholding (and such notification has not been withdrawn). Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules will be allowed as a refund or a credit against a U.S. holder’s U.S. federal income tax liability provided the required information is timely furnished to the IRS.

Tax Consequences to Non-U.S. Holders

Exercise or Expiration of Common Warrants

In general, a non-U.S. holder will not be required to recognize income, gain or loss upon the exercise of a Common Warrant by payment of the exercise price. To the extent that a cashless exercise results in a taxable exchange, the consequences would be similar to those described below under “—Sale, Exchange or Other Taxable Disposition of Our Common Stock or Warrants.”

The expiration of a Common Warrant will be treated as if the non-U.S. holder sold or exchanged the Common Warrant and recognized a capital loss equal to the non-U.S. holder's basis in the Common Warrant. A non-U.S. holder will not be able to utilize a loss recognized upon expiration of a Common Warrant against the non-U.S. holder's U.S. federal income tax liability, however, unless the loss (i) is effectively connected with the non-U.S. holder's conduct of a trade or business within the United States (and, if an income tax treaty applies, is attributable to a "permanent establishment" or "fixed base" in the United States) or (ii) is treated as a U.S. source loss and the non-U.S. holder is present in the United States 183 days or more in the taxable year of disposition and certain other conditions are met.

Distributions on Our Common Stock

As discussed above under "Dividend Policy," we do not currently expect to make distributions on our common stock. In the event that we do make distributions to holders of our common stock or if we are treated as making a constructive distribution to holders of our Common Warrants or Pre-Funded Warrants, those distributions generally 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. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such non-U.S. holder's tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in "—Sale, Exchange or Other Taxable Disposition of Our Common Stock or Warrants."

Distributions (including constructive distributions) made to a non-U.S. holder that are treated as dividends generally will be subject to withholding of U.S. federal income tax at a rate of 30% of the gross amount or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence, unless such dividends are effectively connected with a trade or business conducted by a non-U.S. holder within the U.S. (as discussed below). A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or successor form), as applicable, and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their own tax advisors regarding their entitlement to benefits under a relevant income tax treaty. A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may be able to obtain a refund or credit of any excess amounts withheld by timely filing the required information with the IRS.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a "permanent establishment" or a "fixed base" maintained by the non-U.S. holder within the United States, generally are exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. U.S. effectively connected income, net of specified deductions and credits, is generally taxed at the same graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Constructive Distributions on Our Warrants

As described above under "—Tax Consequences to U.S. Holders—Constructive Distributions on Our Warrants," an adjustment to the Common Warrants or Pre-Funded Warrants could result in a constructive distribution to a non-U.S. holder, which would be treated as described under "—Distributions on Our Common Stock" above. Any resulting withholding tax attributable to deemed dividends would be collected from other amounts payable or distributable to the non-U.S. holder. Non-U.S. holders should consult their tax advisors regarding the proper treatment of any adjustments to the Common Warrants and Pre-Funded Warrants.

In addition, regulations governing "dividend equivalents" under Section 871(m) of the Code may apply to the Pre-Funded Warrants. Under those regulations, an implicit or explicit payment made to the holder of Pre-Funded Warrants that references a distribution on our common stock would generally be taxable to a non-U.S. holder in the manner described under "—Distributions on our Common Stock" below. Such dividend equivalent amount would be taxable and subject to withholding whether or not there is actual payment of cash or other property, and we may satisfy any withholding obligations by withholding from other amounts due to the non-U.S. holder. Non-U.S. holders are encouraged to consult their own tax advisors regarding the application of Section 871(m) of the Code to the Pre-Funded Warrants.

Sale, Exchange or Other Taxable Disposition of Our Common Stock or Warrants

In general, a non-U.S. holder will not be subject to any U.S. federal income tax on any gain realized upon such holder's sale, exchange or other taxable disposition of shares of our common stock, Common Warrants or Pre-Funded Warrants unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a U.S. trade or business and, if an applicable income tax treaty so provides, is attributable to a "permanent establishment" or a "fixed base" maintained by such non-U.S. holder in the United States, in which case the non-U.S. holder generally will be taxed on such gain at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in "Tax Consequences to Non-U.S. Holders—Distributions on Our Common Stock" also may apply to such gain;
- the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the taxable disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence) on the net gain derived from the taxable disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder, if any; or
- we are, or have been, at any time during the five-year period preceding such taxable disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation," unless our common stock is regularly traded on an established securities market and the non-U.S. holder holds no more than 5% of our outstanding common stock, directly or indirectly, during the shorter of the 5-year period ending on the date of the taxable disposition or the period that the non-U.S. holder held our common stock. If we are determined to be a U.S. real property holding corporation and the foregoing exception does not apply, then a purchaser may withhold 15% of the proceeds payable to a non-U.S. holder from a sale of our common stock, Common Warrants or Pre-Funded Warrants, and the non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Generally, a corporation is a U.S. real property holding corporation only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. No assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above.

Information Reporting and Backup Withholding

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions paid on our common stock (and constructive distributions on our Common Warrants and Pre-Funded Warrants) to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders may have to comply with specific certification procedures to establish that the holder is not a United States person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock, Common Warrants or Pre-Funded Warrants. Dividends paid to non-U.S. holders subject to the U.S. withholding tax, as described above in "Tax Consequences to Non-U.S. Holders—Distributions on Our Common Stock," generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding generally will apply to the proceeds of a disposition of our common stock, Common Warrants and Pre-Funded Warrants by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that an appropriate claim is filed with the IRS.

Foreign Accounts

The Foreign Account Tax Compliance Act, or FATCA, generally imposes a 30% withholding tax on dividends (including constructive dividends) on, and gross proceeds from the sale or other disposition of, our common stock and Warrants if paid to a non-U.S. entity unless (i) if the non-U.S. entity is a "foreign financial institution," the non-U.S. entity undertakes certain due diligence, reporting, withholding, and certification obligations, (ii) if the non-U.S. entity is not a "foreign financial institution," the non-U.S. entity identifies certain of its U.S. investors, if any, or (iii) the non-U.S. entity is otherwise exempt under FATCA.

While withholding under FATCA may apply to payments of gross proceeds from a sale or other disposition of our common stock, Common Warrants or Pre-Funded Warrants, under proposed U.S. Treasury Regulations withholding on payments of gross proceeds is not required. Although such regulations are not final, applicable withholding agents may rely on the proposed regulations until final regulations are issued.

An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this section. Under certain circumstances, a holder may be eligible for refunds or credits of the tax. Non-U.S. holders should consult their own tax advisors regarding the possible implications of FATCA on their investment in our common stock, Common Warrants or Pre-Funded Warrants.

The preceding discussion of material U.S. federal income tax considerations is for informational purposes only. It is not tax advice. Prospective investors should consult their own tax advisors regarding the particular U.S. federal, state, local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock, Common Warrants or Pre-Funded Warrants, including the consequences of any proposed changes in applicable laws.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, Sidley Austin LLP, New York, New York, will pass upon the validity of the securities offered by this prospectus and any supplement hereto. The underwriters are being represented by Ellenoff Grossman & Schole LLP, New York, New York.

EXPERTS

The financial statements of Collectar Biosciences, Inc. as of December 31, 2024 and 2023, and for each of the two years in the period ended December 31, 2024, incorporated by reference in this prospectus, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report. Such financial statements are incorporated by reference in reliance upon the report of such firm given their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement under the Securities Act with respect to the securities being offered under this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities being offered under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. You may obtain copies of the registration statement and its exhibits via the SEC's website at <http://www.sec.gov>.

You can also read our Securities and Exchange Commission filings, including the registration statement, over the Internet at the SEC's website at www.sec.gov. You may also request a copy of these filings, at no cost, by writing us at 100 Campus Drive, Florham Park, New Jersey 07932 or telephoning us at (608) 441-8120.

We are subject to the informational and reporting requirements of the Securities Exchange Act of 1934, as amended, and have filed and will file annual, quarterly and current reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available for inspection and copying at the SEC's public reference facilities and the website of the SEC referred to above. We maintain a website at <https://www.collectar.com>. You may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” information into this prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this prospectus, except for any information that is superseded by other information that is included in this prospectus. The information we incorporate by reference is an important part of this prospectus and information that we subsequently file with the SEC will automatically update and supersede information in this prospectus and in our other filings with the SEC.

We incorporate by reference the documents listed below, which we have already filed with the SEC, and any filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (1) on or after the date of filing of the registration statement of which this prospectus forms a part and (2) on or after the date of this prospectus until the earlier of the date on which all of the securities registered hereunder have been sold or the registration statement of which this prospectus is a part has been withdrawn (in each case, other than information that is deemed, under SEC rules, not to have been filed):

- [our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, filed with the SEC on March 13, 2025;](#)
- [our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2025, filed with the SEC on May 13, 2025;](#)
- the portions of our [Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 28, 2025](#), that are incorporated by reference in our [Annual Report on Form 10-K for the fiscal year ended December 31, 2024](#);
- our Current Reports on Form 8-K, filed with the SEC on [January 31, 2025](#), [March 17, 2025](#), [May 1, 2025](#), [June 5, 2025](#) (excluding Item 7.01 and the related exhibit 99.1), [June 13, 2025](#), [June 18, 2025](#) and [June 25, 2025](#) and
- the description of our common stock and warrants to purchase common stock included in our registration statement on [Form 8-A filed on August 14, 2014](#), as the same may be updated by [Exhibit 4.3 to Amendment No. 1 to our Annual Report on Form 10-K filed on April 1, 2024](#), including all other amendments and reports filed for the purpose of updating such description.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and those made after the effectiveness of such registration statement, until the termination of the offering of the common stock made by this prospectus, and such filings will become a part of this prospectus from the respective dates that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information herein or in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

You may request and obtain a copy of any of the filings incorporated herein by reference, at no cost, by writing or telephoning us at the following address or phone number:

Collectar Biosciences, Inc.
100 Campus Drive
Florham Park, New Jersey 07932
Attention: Chief Financial Officer
(608) 441-8120



Up to 755,667 Class A Units with each Class A Unit consisting of (i) one (1) Share of Common Stock and (ii) one (1) Common Warrant to purchase one (1) Share of Common Stock

Or

Up to 755,667 Class B Units with each Class B Unit consisting of (i) one (1) Pre-Funded Warrant to Purchase one (1) Share of Common Stock and (ii) one (1) Common Warrant to purchase one (1) Share of Common Stock

Up to 45,340 Representative Warrants to Purchase up to 45,340 Shares of Common Stock

Up to 1,556,674 Shares of Common Stock Issuable Upon Exercise of (i) up to 755,667 Pre-Funded Warrants, (ii) up to 755,667 Common Warrants and (iii) up to 45,340 Representative Warrants

PROSPECTUS

Ladenburg Thalmann

, 2025

We have not authorized any dealer, salesperson or other person to give any information or represent anything not contained in this prospectus. You must not rely on any unauthorized information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus does not offer to sell any securities in any jurisdiction where it is unlawful. Neither the delivery of this prospectus, nor any sale made hereunder, shall create any implication that the information in this prospectus is correct after the date hereof.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth all expenses to be paid by Collectar Biosciences, Inc. (the Registrant), in connection with the offering. All amounts shown are estimates except for the SEC registration fee and the FINRA filing fee.

SEC Registration Fee	\$	2,317
FINRA Filing Fee		2,800
Accounting Fees and Expenses		75,000
Legal Fees and Expenses		250,000
Miscellaneous Fees and Expenses		29,883
Total	\$	360,000

Item 14. Indemnification of Directors and Officers

Section 102 of the Delaware General Corporation Law (the “DGCL”) permits a corporation to eliminate the personal liability of its directors for monetary damages for a breach of fiduciary duty as a director, except where the director breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our second amended and restated certificate of incorporation (our “Certificate of Incorporation”) provides that none of our directors shall be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she is or is threatened to be made a party by reason of such position, if such person 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, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our Certificate of Incorporation contains provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by the DGCL. Consequently, our directors are not personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director’s duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL; or
- any transaction from which the director derived an improper personal benefit.

Our Certificate of Incorporation provides that we shall indemnify any and all persons whom we shall have power to indemnify under Section 145 from and against any and all of the expenses, liabilities or other matters referred to in or covered by Section 145. Our Certificate of Incorporation provides for the advancement of expenses to each of our directors, officers, employees or agents for the defense of any action for which indemnification is required or permitted.

We have entered into indemnification agreements with certain of our directors and our executive officers. These agreements will provide that we will indemnify such directors and officers to the fullest extent permitted by law and our Certificate of Incorporation.

We also maintain a general liability insurance policy that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

Item 15. Recent Sales of Unregistered Securities

Share and price per amount below are not adjusted to reflect the reverse stock split effectuated on June 24, 2025.

2024 Private Placements

On July 21, 2024, we entered into warrant exercise inducement letters with certain institutional investors holding Tranche B warrants, pursuant to which such holders agreed to exercise for cash such Tranche B warrants to purchase an amount of shares of Series E-4 preferred stock which is convertible to 6,739,918 shares of common stock, in the aggregate, at a reduced, as-converted common stock exercise price of \$2.52 per share, in exchange for our agreement to issue new inducement warrants. We received aggregate gross proceeds of approximately \$19.4 million from the exercise of the Tranche B warrants and the sale of the inducement warrants. We issued the inducement warrants in three different tranches: Tranche A inducement warrants to purchase 6,739,918 shares of common stock, immediately exercisable at an exercise price of \$2.52 per share; Tranche B inducement warrants to purchase 8,214,278 shares of common stock, immediately exercisable at an exercise price of \$4.00 per share; and Tranche C inducement warrants to purchase 4,267,152 shares of common stock, immediately exercisable at an exercise price of \$5.50 per share. In each case, 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 common stock and the exercise price. These securities were offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder, and we intend to issue shares of common stock upon exercise of the inducement warrants pursuant to the same exemption or pursuant to the exemption provided in Section 3(a)(9) under the Securities Act.

2023 Private Placements

On September 8, 2023, in a private placement with certain institutional investors, we issued 1,225 shares of Series E-1 preferred stock, along with Tranche A warrants to purchase 2,205 shares of Series E-3 preferred stock and Tranche B warrants to purchase 1,715 shares of Series E-4 preferred stock. Shares of Series E preferred stock were issued at a fixed price of \$20,000 per share, resulting in gross proceeds of \$24.5 million and net proceeds of approximately \$22.2 million after placement agent fees and other customary expenses. The conversion prices for the preferred stock are as follows: for the Series E-1 or E-2 preferred stock, \$1.82 per share of common stock, or a total of 13,461,538 shares of common stock; for the Series E-3 preferred stock, \$3.185 per share of common stock, or a total of 13,846,154 shares of common stock; and for the Series E-4 preferred stock, \$4.7775 per share of common stock, or a total of 7,179,487 shares of common stock, in each case subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization. These securities were offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder.

2022 Private Placements

On October 20, 2022, we entered into a securities purchase agreement with certain purchasers named therein, pursuant to which we agreed to issue, in a private placement transaction, common warrants to purchase an aggregate of 3,275,153 shares of common stock at an exercise price of \$1.96 per share. In a separate concurrent private placement transaction, we entered into a private placement securities purchase agreement with certain purchasers named therein, pursuant to which we agreed to issue pre-funded warrants to purchase an aggregate of up to 1,875,945 shares of common stock, and common warrants to purchase an aggregate of 1,875,945 shares of common stock at an exercise price of \$1.96 per share. The purchase price of each pre-funded warrant was \$2.08499 and they are exercisable at an exercise price of \$0.00001 per share. The proceeds to us in connection with sale of the warrants and pre-funded warrants were approximately \$3.9 million and we will receive an additional \$10.1 million if the warrants and the pre-funded warrants are exercised in full. The common warrants, pre-funded warrants and the shares of common stock issuable upon the exercise of the common warrants and the pre-funded warrants were offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder.

Item 16. Exhibits and Financial Statement Schedules

Item 16 Exhibits.

Exhibit No.	Description
<u>1.1*</u>	<u>Form of Underwriting Agreement</u>
<u>2.1</u>	<u>Agreement and Plan of Merger by and among Novelos Therapeutics, Inc., Cell Acquisition Corp. and Collectar, Inc. dated April 8, 2011 (filed as Exhibit 2.1 on Form 8-K on April 11, 2011)</u>
<u>3.1</u>	<u>Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on April 11, 2011)</u>
<u>3.2</u>	<u>Certificate of Ownership and Merger of Collectar Biosciences, Inc. with and into Novelos Therapeutics, Inc. (filed as Exhibit 3.1 on Form 8-K on February 13, 2014)</u>
<u>3.3</u>	<u>Certificate of Amendment to Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on June 13, 2014)</u>
<u>3.4</u>	<u>Certificate of Amendment to Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.2 on Form 8-K on June 19, 2015)</u>
<u>3.5</u>	<u>Certificate of Amendment to Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on March 4, 2016)</u>
<u>3.6</u>	<u>Certificate of Amendment of Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.2 on Form 8-K on June 1, 2017)</u>
<u>3.7</u>	<u>Certificate of Amendment of Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on July 13, 2018)</u>
<u>3.8</u>	<u>Certificate of Amendment of Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on February 25, 2021)</u>
<u>3.9</u>	<u>Certificate of Correction of Certificate of Amendment of Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 10-Q on May 10, 2022)</u>
<u>3.10</u>	<u>Certificate of Amendment of Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on July 21, 2022)</u>
<u>3.11</u>	<u>Certificate of Amendment to Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on October 27, 2023)</u>
<u>3.12</u>	<u>Certificate of Amendment of Second Amended and Restated Certificate of Incorporation (filed as Exhibit 3.1 on Form 8-K on June 25, 2025)</u>
<u>3.13</u>	<u>Amended and Restated By-Laws of Collectar Biosciences, Inc., effective as of March 11, 2025 (filed as Exhibit 3.1 on Form 8-K on March 17, 2025)</u>
<u>3.14</u>	<u>Form of Certificate of Designation of Series D Preferred Stock certificate (filed as Exhibit 3.1 on Form 8-K on December 28, 2020)</u>
<u>3.15</u>	<u>Certificate of Elimination of the Series A Convertible Preferred Stock, the Series B Convertible Preferred Stock and the Series C Convertible Preferred Stock (filed as Exhibit 3.1 on Form 8-K on September 8, 2023)</u>
<u>3.16</u>	<u>Amendment No. 1 to Certificate of Designation of the Series D Preferred Stock (filed as Exhibit 3.2 on Form 8-K on September 8, 2023)</u>
<u>3.17</u>	<u>Certificate of Designation of Preferences, Rights and Limitations of the Series E Convertible Voting Preferred Stock (filed as Exhibit 3.3 on Form 8-K on September 8, 2023)</u>
<u>4.1</u>	<u>Form of Common Stock Certificate (filed as Exhibit 4.1 to Form S-1/A on November 9, 2011)</u>
4.2***	Form of Common Warrant
4.3***	Form of Pre-Funded Warrant
4.4***	Form of Representative Warrant

Exhibit No.	Description
<u>4.5*</u>	<u>Form of Warrant Agency Agreement</u>
<u>5.1***</u>	<u>Opinion of Sidley Austin LLP</u>
<u>10.1**</u>	<u>Form of Restricted Common Stock Agreement (filed as Exhibit 10.1 on Form 10-Q on August 14, 2017)</u>
<u>10.2</u>	<u>Form of Series D Common Stock Purchase Warrant (filed as Exhibit 4.1 on Form 8-K on October 11, 2017)</u>
<u>10.3</u>	<u>Registration Rights Agreement, dated as of October 10, 2017, by and among Collectar Biosciences, Inc. and the Purchasers (filed as Exhibit 10.2 on Form 8-K on October 11, 2017)</u>
<u>10.4**</u>	<u>Form of Non-Statutory Stock Option (filed as Exhibit 10.2 on Form S-8 on November 9, 2017)</u>
<u>10.5**</u>	<u>Stock Option Agreement with James V. Caruso (filed as Exhibit 10.4 on Form S-8 on November 9, 2017)</u>
<u>10.6**</u>	<u>Stock Option Agreement with Jarrod Longcor (filed as Exhibit 10.5 on Form S-8 on November 9, 2017)</u>
<u>10.7</u>	<u>Series E Common Stock Purchase Warrant (filed as Exhibit 4.5 on Form S-1/A on July 18, 2018)</u>
<u>10.8</u>	<u>Form of Warrant Agency Agreement (filed as Exhibit 4.7 on Form S-1/A on July 18, 2018)</u>
<u>10.9</u>	<u>Agreement of Lease between the Company and KBS II 100-200 Campus Drive, LLC (filed as Exhibit 10.35 on Form S-1/A on July 18, 2018)</u>
<u>10.10**</u>	<u>Form of Non-Statutory Stock Option (Definitive/Contingent - Employees) (filed as Exhibit 10.3 on Form 10-Q on November 13, 2018)</u>
<u>10.11**</u>	<u>Form of Non-Statutory Stock Option (Definitive/Contingent - Directors) (filed as Exhibit 10.4 on Form 10-Q on November 13, 2018)</u>
<u>10.12**</u>	<u>Amended and Restated Employment Agreement between the Company and James Caruso, dated April 15, 2019 (filed as Exhibit 10.1 on Form 8-K on April 19, 2019)</u>
<u>10.13**</u>	<u>Amended and Restated Employment Agreement between the Company and Jarrod Longcor, dated April 15, 2019 (filed as Exhibit 10.2 on Form 8-K on April 19, 2019)</u>
<u>10.14</u>	<u>Form of Series F Common Stock Purchase Warrant (filed as Exhibit 4.1 on Form 8-K on May 20, 2019)</u>
<u>10.15</u>	<u>Form of Series G Common Stock Purchase Warrant (filed as Exhibit 4.2 on Form 8-K on May 20, 2019)</u>
<u>10.16</u>	<u>Registration Rights Agreement, dated as of May 16, 2019, by and among Collectar Biosciences, Inc. and the Purchasers (filed as Exhibit 10.3 on Form 8-K on May 20, 2019)</u>
<u>10.17**</u>	<u>2021 Stock Incentive Plan (filed as Exhibit 10.1 on Form 8-K on June 24, 2021)</u>
<u>10.18**</u>	<u>Amendment 1 to the 2021 Stock Incentive Plan (filed as Exhibit 10.1 on Form 8-K on June 27, 2022)</u>
<u>10.19**</u>	<u>2021 Stock Incentive Plan, as Amended (filed as Exhibit 10.1 on Form 8-K on June 29, 2023)</u>
<u>10.20**</u>	<u>2021 Stock Incentive Plan, as Amended (filed as Exhibit 10.1 on Form 8-K on June 14, 2024)</u>
<u>10.21**</u>	<u>Amendment to Amended and Restated Employment Agreement between the Company and Jarrod Longcor dated November 10, 2019 (filed as Exhibit 10.2 on Form 10-Q on November 12, 2019)</u>
<u>10.22</u>	<u>Equity Distribution Agreement between Collectar Biosciences, Inc. and Oppenheimer & Co. Inc., dated August 11, 2020 (filed as Exhibit 10.1 on Form 8-K on August 11, 2020)</u>
<u>10.23</u>	<u>Equity Distribution Agreement, dated May 24, 2024, between the Company and Piper Sandler & Co. (filed as Exhibit 1.2 on Form S-3 on May 24, 2024)</u>
<u>10.24</u>	<u>Form of Tranche A Warrant (filed as Exhibit 4.1 on Form 8-K on September 8, 2023)</u>
<u>10.25</u>	<u>Form of Tranche B Warrant (filed as Exhibit 4.2 on Form 8-K on September 8, 2023)</u>
<u>10.26</u>	<u>Form of Securities Purchase Agreement (filed as Exhibit 10.1 on Form 8-K on September 8, 2023)</u>
<u>10.27</u>	<u>Form of Registration Rights Agreement (filed as Exhibit 10.2 on Form 8-K on December 28, 2020)</u>
<u>10.28**</u>	<u>Employment Agreement between the Company and Chad Kolean, dated February 23, 2022 (filed as Exhibit 10.1 on Form 8-K on February 25, 2022)</u>
<u>10.29</u>	<u>Form of First Amendment of Lease, dated December 30, 2022 (filed on Form 8-K on January 4, 2023)</u>
<u>10.30</u>	<u>Placement Agency Agreement, dated as of October 20, 2022, by and between Collectar Biosciences, Inc. and Oppenheimer & Co. Inc. (filed as Exhibit 1.1 on Form 8-K on October 25, 2022)</u>
<u>10.31</u>	<u>Form of Common Warrant (filed as Exhibit 4.1 on Form 8-K on October 25, 2022)</u>
<u>10.32</u>	<u>Form of Pre-Funded Warrant (filed as Exhibit 4.2 on Form 8-K on October 25, 2022)</u>
<u>10.33</u>	<u>Form of Hybrid Securities Purchase Agreement, dated as of October 20, 2022, by and between the Company and the purchasers named therein (filed as Exhibit 10.1 on Form 8-K on October 25, 2022)</u>
<u>10.34</u>	<u>Form of PIPE Securities Purchase Agreement, dated as of October 20, 2022, by and between the Company and the purchasers named therein (filed as Exhibit 10.2 on Form 8-K on October 25, 2022)</u>
<u>10.35</u>	<u>Form of Registration Rights Agreement, dated as of October 20, 2022, by and between the Company and the purchasers named therein (filed as Exhibit 10.3 on Form 8-K on October 25, 2022)</u>
<u>10.36</u>	<u>Form of Indemnification Agreement (filed as Exhibit 10.1 on Form 8-K on December 2, 2022)</u>
<u>10.37</u>	<u>Inducement Letter in consideration for Exercise of the Tranche B warrants (filed as Exhibit 10.1 on Form 8-K on July 22, 2024)</u>
<u>10.38</u>	<u>Form of Indenture (filed as Exhibit 4.7 on Form S-3 on May 24, 2024)</u>
<u>10.39</u>	<u>Form of Common Stock Purchase Warrant A (filed as Exhibit 4.1 on Form 8-K on July 22, 2024)</u>
<u>10.40</u>	<u>Form of Common Stock Purchase Warrant B (filed as Exhibit 4.2 on Form 8-K on July 22, 2024)</u>
<u>10.41</u>	<u>Form of Common Stock Purchase Warrant C (filed as Exhibit 4.3 on Form 8-K on July 22, 2024)</u>
<u>10.42</u>	<u>Inducement Letter in consideration for Exercise of the Common Stock Purchase Warrants issued on June 5, 2020, October 25, 2022 and July 21, 2024 (filed as Exhibit 10.1 on Form 8-K on June 5, 2025)</u>
<u>16.1</u>	<u>Letter Regarding Change in Certifying Accountant (filed as Exhibit 16.1 on Form 8-K on July 11, 2024)</u>
<u>21.1</u>	<u>List of Subsidiaries (filed as Exhibit 21.1 on Form 10-K on March 13, 2025)</u>
<u>23.1***</u>	<u>Consent of Sidley Austin LLP (included in Exhibit 5.1)</u>
<u>23.2*</u>	<u>Consent of Deloitte & Touche LLP</u>
<u>24.1*</u>	<u>Powers of Attorney (included on signature page)</u>
<u>107*</u>	<u>Filing Fee Table</u>

* Filed herewith.

** Management contract or compensatory plan or arrangement.

*** To be filed by amendment.

Item 17. Undertakings

(a) 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 of 1933, as amended (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 20% 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 the undertakings set forth in paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) above 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 Securities Exchange Act of 1934, as amended (the “Exchange Act”), that are incorporated by reference in this registration statement or are contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this 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. That, for the purpose of determining liability under the Securities Act to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to the offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

- (b) The undersigned registrant hereby undertakes 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 section 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.
- (c) 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 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 of 1933, 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 Florham Park, State of New Jersey on June 26, 2025.

CELLECTAR BIOSCIENCES, INC.

By: /s/ James V. Caruso

Name: James V. Caruso

Title: Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned directors and officers of Collectar Biosciences, Inc. (the Company), hereby severally constitute and appoint James V. Caruso and Chad J. Kolean, and each of them singly, our true and lawful attorneys, with full power to them, and to each of them singly, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-1 filed herewith, and any and all pre-effective and post-effective amendments to said registration statement, and any registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, in connection with the registration under the Securities Act of 1933, as amended, of equity securities of the Company, and to file or cause to be filed the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as each of them might or could do in person, and hereby ratifying and confirming all that said attorneys, and each of them, or their substitute or substitutes, shall do or cause to be done by virtue of this Power of Attorney. This Power of Attorney does not revoke any power of attorney previously granted by the undersigned, or any of them.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities indicated on the date indicated:

Signature	Title	Date
<u>/s/ James V. Caruso</u> James V. Caruso	President, Chief Executive Officer and Director (<i>principal executive officer</i>)	June 26, 2025
<u>/s/ Chad J. Kolean</u> Chad J. Kolean	Chief Financial Officer (<i>principal financial officer and principal accounting officer</i>)	June 26, 2025
<u>/s/ Douglas J. Swirsky</u> Douglas J. Swirsky	Chairman of the Board	June 26, 2025
<u>/s/ Asher Alban Chanan-Khan</u> Asher Alban Chanan-Khan	Director	June 26, 2025
<u>/s/ Frederick W. Driscoll</u> Frederick W. Driscoll	Director	June 26, 2025
<u>/s/ Stefan D. Loren, Ph.D.</u> Stefan D. Loren, Ph.D.	Director	June 26, 2025
<u>/s/ John Neis</u> John Neis	Director	June 26, 2025

[] SHARES OF COMMON STOCK,
[] PRE-FUNDED WARRANTS EXERCISABLE INTO [] SHARES OF COMMON STOCK
AND
[] COMMON WARRANTS EXERCISABLE INTO [] SHARES OF COMMON STOCK
CELLECTAR BIOSCIENCES, INC.
UNDERWRITING AGREEMENT

[], 2025

Ladenburg Thalmann & Co. Inc.

As the Representative of the

Several underwriters, if any, named in Schedule I hereto

640 Fifth Avenue, 4th Floor

New York, New York 10019

Ladies and Gentlemen:

The undersigned, Collectar Biosciences, Inc., a company incorporated under the laws of Delaware (collectively with its subsidiaries and affiliates, including, without limitation, all entities disclosed or described in the Registration Statement as being subsidiaries of Collectar Biosciences, Inc., (the “Company”), hereby confirms its agreement (this “Agreement”) with the several underwriters (such underwriters, including the Representative (as defined below), the “Underwriters” and each an “Underwriter”) named in Schedule I hereto for which Ladenburg Thalmann & Co. Inc. is acting as representative to the several Underwriters (the “Representative” and if there are no Underwriters other than the Representative, references to multiple Underwriters shall be disregarded and the term Representative as used herein shall have the same meaning as Underwriter) on the terms and conditions set forth herein.

It is understood that the several Underwriters are to make a public offering of the Public Securities as soon as the Representative deems it advisable to do so. The Public Securities are to be initially offered to the public at the public offering price set forth in the Prospectus.

It is further understood that you will act as the Representative for the Underwriters in the offering and sale of the Closing Securities and, if any, the Option Securities in accordance with this Agreement.

**ARTICLE I.
DEFINITIONS**

1.1 Definitions. In addition to the terms defined elsewhere in this Agreement, for all purposes of this Agreement, the following terms have the meanings set forth in this Section 1.1:

“Action” shall have the meaning ascribed to such term in Section 3.1(k).

“Affiliate” means with respect to any Person, any other Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with such Person as such terms are used in and construed under Rule 405 under the Securities Act.

“Board of Directors” means the board of directors of the Company.

“Business Day” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to “stay at home”, “shelter-in-place”, “non-essential employee” or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York generally are open for use by customers on such day.

“Closing” means the closing of the purchase and sale of the Closing Securities pursuant to Section 2.1.

“Closing Date” means the hour and the date on the Trading Day on which all conditions precedent to (i) the Underwriters’ obligations to pay the Closing Purchase Price and (ii) the Company’s obligations to deliver the Closing Securities, in each case, have been satisfied or waived, but in no event later than 10:00 a.m. (New York City time) on the first (1st) Trading Day following the date hereof (or the second (2nd) Trading Day following the date hereof if this Agreement is signed on a day that is not a Trading Day or after 4:00 p.m. (New York City time) and before midnight (New York City time) on a Trading Day) or at such earlier time as shall be agreed upon by the Representative and the Company.

“Closing Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b), which aggregate purchase price shall be net of the underwriting discounts and commissions.

“Closing Securities” shall have the meaning ascribed to such term in Section 2.1(a)(iii).

“Closing Shares” shall have the meaning ascribed to such term in Section 2.1(a)(i).

“Closing Warrants” shall have the meaning ascribed to such term in Section 2.1(a)(iii).

“Combined Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b).

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the common stock of the Company, par value \$0.00001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Common Warrants” means the Common Stock purchase warrants delivered to the Underwriters in accordance with Section 2.1(a)(iii) and Section 2.2, which Common Warrants shall be exercisable immediately upon issuance and have a term of exercise equal to five (5) years, in the form of Exhibit B attached hereto.

“Common Warrant Shares” means the shares of Common Stock issuable upon exercise of the Common Warrants.

“Company Auditor” means Deloitte & Touche LLP, with offices located at [_____].

“Company Counsel” means Sidley Austin LLP, with offices located at 787 Seventh Avenue, New York, NY 10019.

“Company IP Counsel” means Michael Best & Friedrich LLP, with offices located at 790 N Water Street, Suite 2500, Milwaukee, WI 53202 and 444 West Lake Street, Suite 3200, Chicago, IL 60606.

“Effective Date” shall have the meaning ascribed to such term in Section 3.1(f).

“EGS” means Ellenoff Grossman & Schole LLP, with offices located at 1345 Avenue of the Americas, New York, New York 10105.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Execution Date” shall mean the date on which the parties execute and enter into this Agreement.

“Exempt Issuance” means the issuance of (a) shares of Common Stock or options to employees, officers or directors of the Company pursuant to any stock or option plan duly adopted for such purpose by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder, warrants to the Representative in connection with the transactions pursuant to this Agreement and any securities upon exercise of warrants to the Representative and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities or to extend the term of such securities, and (c) securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that such securities are issued as “restricted securities” (as defined in Rule 144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith during the prohibition period in Section 4.19(a) herein, and provided that any such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

“FCPA” means the Foreign Corrupt Practices Act of 1977, as amended.

“FINRA” means the Financial Industry Regulatory Authority.

“GAAP” shall have the meaning ascribed to such term in Section 3.1(i).

“Indebtedness” means (a) any liabilities for borrowed money or amounts owed in excess of \$50,000 (other than trade accounts payable incurred in the ordinary course of business), (b) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company’s consolidated balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (c) the present value of any lease payments in excess of \$50,000 due under leases required to be capitalized in accordance with GAAP.

“Liens” means a lien, charge, pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction.

“Lock-Up Agreements” means the lock-up agreements, in the form of Exhibit A attached hereto, delivered on the date hereof by each of the Company’s officers and directors set forth on Schedule II hereto.

“Material Adverse Effect” means (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, prospects or condition (financial or otherwise) of the Company and the Subsidiaries, taken as a whole or (iii) a material adverse effect on the Company’s ability to perform in any material respect on a timely basis its obligations under any Transaction Document.

“Offering” shall have the meaning ascribed to such term in Section 2.1(c).

“Option” shall have the meaning ascribed to such term in Section 2.2.

“Option Closing Date” shall have the meaning ascribed to such term in Section 2.2(c).

“Option Closing Purchase Price” shall have the meaning ascribed to such term in Section 2.2(b), which aggregate purchase price shall be net of the underwriting discounts and commissions.

“Option Securities” shall have the meaning ascribed to such term in Section 2.2(a).

“Option Shares” shall have the meaning ascribed to such term in Section 2.2(a).

“Option Warrants” shall have the meaning ascribed to such term in Section 2.2(a).

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Pre-Funded Warrants” means, collectively, the pre-funded Common Stock purchase warrants delivered to the Underwriters in accordance with Section 2.1(a) (ii), which Pre-Funded Warrants shall be exercisable immediately and shall be exercisable until exercised in full, in the form of Exhibit C attached hereto.

“Pre-Funded Warrant Shares” means the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants.

“Preliminary Prospectus” means any preliminary prospectus relating to the Securities included in the Registration Statement or filed with the Commission pursuant to Rule 424(b).

“Proceeding” means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“Prospectus” means the final prospectus filed for the Registration Statement.

“Prospectus Supplement” means, if any, any supplement to the Prospectus complying with Rule 424(b) of the Securities Act that is filed with the Commission.

“Public Securities” means, collectively, the Closing Securities and, if any, the Option Securities.

“Registration Statement” means, collectively, the various parts of the registration statement prepared by the Company on Form S-1 (File No. 333-[____]) with respect to the Securities, each as amended as of the date hereof, including the Preliminary Prospectus, the Prospectus and Prospectus Supplement, if any, all SEC Reports incorporated by reference into such registration statement and all exhibits filed with or incorporated by reference into such registration statement, and includes any Rule 462(b) Registration Statement.

“Required Approvals” shall have the meaning ascribed to such term in Section 3.1(e).

“Rule 424” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Rule 462(b) Registration Statement” means any registration statement prepared by the Company registering additional Public Securities, which was filed with the Commission on or prior to the date hereof and became automatically effective pursuant to Rule 462(b) promulgated by the Commission pursuant to the Securities Act.

“SEC Reports” shall have the meaning ascribed to such term in Section 3.1(i).

“Securities” means the Closing Securities, the Option Securities and the Warrant Shares.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Share Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b).

“Shares” means, collectively, the shares of Common Stock delivered to the Underwriters in accordance with Section 2.1(a)(i) and Section 2.2(a).

“Subsidiary” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“Trading Day” means a day on which the principal Trading Market is open for trading.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market or the New York Stock Exchange (or any successors to any of the foregoing).

“Transaction Documents” means this Agreement, the Warrants, the Warrant Agency Agreement, the Lock-Up Agreements, and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means Equiniti Trust Company, LLC, the current transfer agent of the Corporation with a mailing address of 48 Wall Street, 23rd Floor, New York, NY 10043 and any successor transfer agent of the Company.

“Warrant Agency Agreement” means the warrant agency agreement dated on or about the Closing Date, among the Company and the Transfer Agent in the form of Exhibit D attached hereto.

“Warrant Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b).

“Warrant Shares” means the shares of Common Stock issuable upon exercise of the Warrants.

“Warrants” means, collectively, the Common Warrants and the Pre-Funded Warrants.

ARTICLE II. PURCHASE AND SALE

2.1 Closing.

(a) Upon the terms and subject to the conditions set forth herein, the Company agrees to sell in the aggregate (i) [_____] shares of Common Stock, (ii) Pre-Funded Warrants exercisable for an aggregate of [_____] shares of Common Stock and (iii) Common Warrants exercisable for an aggregate of [_____] shares of Common Stock, and each Underwriter agrees to purchase, severally and not jointly, at the Closing, the following securities of the Company:

- (i) the number of shares of Common Stock (the “Closing Shares”) set forth opposite the name of such Underwriter on Schedule I hereof;
- (ii) Pre-Funded Warrants to purchase up to the number of shares of Common Stock set forth opposite the name of such Underwriter on Schedule I hereof (the “Pre-Funded Warrants”) which Pre-Funded Warrants shall have an exercise price of \$0.00001, subject to adjustment as provided therein; and

(iii) Common Warrants to purchase up to the number of Common Warrant Shares equal to 100% of the sum of the number of Closing Shares and the Pre-Funded Warrant Shares set forth opposite the name of such Underwriter on Schedule I hereof (the “Closing Warrants” and, collectively with the Closing Shares and Pre-Funded Warrants, the “Closing Securities”), which Common Warrants shall have an exercise price of \$[____], subject to adjustment as provided therein.

(b) The aggregate purchase price for the Closing Securities shall equal the amount set forth opposite the name of such Underwriter on Schedule I hereto (the “Closing Purchase Price”). The combined purchase price for one Share and one Common Warrant shall be \$[____] (the “Combined Purchase Price”) which shall be allocated as \$[____] per Share (the “Share Purchase Price”) and \$[____] per Common Warrant (the “Warrant Purchase Price”). The combined purchase price for one Pre-Funded Warrant and one Common Warrant shall be \$[____], which shall be allocated as \$[____] per Pre-Funded Warrant and \$[____] per Common Warrant.

(c) On the Closing Date, each Underwriter shall deliver or cause to be delivered to the Company, via wire transfer, immediately available funds equal to such Underwriter’s Closing Purchase Price and the Company shall deliver to, or as directed by, such Underwriter its respective Closing Securities and the Company shall deliver the other items required pursuant to Section 2.3 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.3 and 2.4, the Closing shall occur at the offices of EGS or such other location as the Company and Representative shall mutually agree. The Public Securities are to be offered initially to the public at the offering price set forth on the cover page of the Prospectus (the “Offering”).

(d) The Company acknowledges and agrees that, with respect to any Notice(s) of Exercise (as defined in the Pre-Funded Warrants) delivered by a Holder (as defined in the Pre-Funded Warrants) on or prior to 12:00 p.m. (New York City time) on the Closing Date, which Notice(s) of Exercise may be delivered at any time after the time of execution of this Agreement, the Company shall deliver the Warrant Shares subject to such notice(s) to the Holder by 4:00 p.m. (New York City time) on the Closing Date and the Closing Date shall be the Warrant Share Delivery Date (as defined in the Pre-Funded Warrants). The Company acknowledges and agrees that the Holders are third-party beneficiaries of this covenant of the Company.

2.2 Option to Purchase Additional Securities.

(a) For the purposes of covering any over-allotments in connection with the distribution and sale of the Closing Securities, the Representative is hereby granted an option (the “Option”) to purchase, in the aggregate, up to [____]¹ shares of Common Stock (the “Option Shares”) and Common Warrants to purchase up to [____]² shares of Common Stock (the “Option Warrants”) and, collectively with the Option Shares, the “Option Securities”) which may be purchased in any combination of Option Shares and/or Option Warrants at the Share Purchase Price and/or Warrant Purchase Price, respectively.

¹ 15% of the Closing Shares and Pre-Funded Warrant Shares

² 15% of the Closing Warrants

(b) In connection with an exercise of the Option, (a) the purchase price to be paid for the Option Shares is equal to the product of the Share Purchase Price multiplied by the number of Option Shares to be purchased and (b) the purchase price to be paid for the Option Warrants is equal to the product of the Warrant Purchase Price multiplied by the number of Option Warrants to be purchased (the aggregate purchase price to be paid on an Option Closing Date, the “Option Closing Purchase Price”).

(c) The Option granted pursuant to this Section 2.2 may be exercised by the Representative as to all (at any time) or any part (from time to time) of the Option Securities within 45 days after the Execution Date. An Underwriter will not be under any obligation to purchase any Option Securities prior to the exercise of the Option by the Representative. The Option granted hereby may be exercised by the giving of oral notice to the Company from the Representative, which must be confirmed in writing by overnight mail or electronic transmission setting forth the number of Option Shares and/or Option Warrants to be purchased and the date and time for delivery of and payment for the Option Securities (each, an “Option Closing Date”), which will not be later than one (1) full Business Day after the date of the notice or such other time as shall be agreed upon by the Company and the Representative, at the offices of EGS or at such other place (including remotely by other electronic transmission) as shall be agreed upon by the Company and the Representative. If such delivery and payment for the Option Securities does not occur on the Closing Date, each Option Closing Date will be as set forth in the notice. Upon exercise of the Option, the Company will become obligated to convey to the Underwriters, and, subject to the terms and conditions set forth herein, the Underwriters will become obligated to purchase, the number of Option Shares and/or Option Warrants specified in such notice. The Representative may cancel the Option at any time prior to the expiration of the Option by written notice to the Company.

2.3 Deliveries. The Company shall deliver or cause to be delivered to each Underwriter (if applicable) the following:

(i) At the Closing Date, the Closing Shares and, as to each Option Closing Date, if any, the applicable Option Shares, which shares shall be delivered via The Depository Trust Company Deposit or Withdrawal at Custodian system for the accounts of the several Underwriters;

(ii) At the Closing Date, the Closing Warrants and, as to each Option Closing Date, if any, the applicable Option Warrants via The Depository Trust Company Deposit or Withdrawal at Custodian system for the accounts of the several Underwriters;

(iii) At the Closing Date, and each Option Closing Date, if any, to the Representative only, a warrant to purchase up to a number of shares of Common Stock equal to 6.0% of the Closing Shares, Pre-Funded Warrants and Option Shares issued on such Closing Date and Option Closing Date, as applicable, for the account of the Representative (or its designees), which Warrant shall have an exercise price of \$[]³, subject to adjustment therein, and registered in the name of the Representative, otherwise on substantially the same terms as the Closing Warrants;

(iv) At the Closing Date, the Warrant Agency Agreement duly executed by the parties thereto;

(v) At the Closing Date, (a) a legal opinion of Company Counsel addressed to the Underwriters, including, without limitation, a negative assurance letter, in form and substance reasonably satisfactory to the Representative and (b) a legal opinion of Company IP Counsel in form and substance reasonably satisfactory to the Representative and as to each Option Closing Date, if any, a bring-down opinion, including, without limitation, a negative assurance letter from Company Counsel and a bring-down opinion from Company IP Counsel, addressed to the Underwriters and in form and substance reasonably satisfactory to the Representative;

(vi) Contemporaneously herewith, a cold comfort letter, addressed to the Underwriters and in form and substance satisfactory in all respects to the Representative from the Company Auditor dated, respectively, as of the date of this Agreement and a bring-down letter dated as of the Closing Date and each Option Closing Date, if any;

(vii) On the Closing Date and on each Option Closing Date, the duly executed and delivered Officers' Certificate, substantially in the form required by Exhibit E attached hereto;

(viii) On the Closing Date and on each Option Closing Date, the duly executed and delivered Secretary's Certificate, substantially in the form required by Exhibit F attached hereto; and

(ix) Contemporaneously herewith, the duly executed and delivered Lock-Up Agreements.

2.4 Closing Conditions. The respective obligations of each Underwriter hereunder in connection with the Closing and each Option Closing Date are subject to the following conditions being met:

(i) the accuracy in all material respects when made and on the date in question (other than representations and warranties of the Company already qualified by materiality, which shall be true and correct in all respects) of the representations and warranties of the Company contained herein (unless as of a specific date therein);

(ii) all obligations, covenants and agreements of the Company required to be performed at or prior to the date in question shall have been performed;

³ 155% of the public offering price

(iii) the delivery by the Company of the items set forth in Section 2.3 of this Agreement;

(iv) the Registration Statement shall be effective on the date of this Agreement and at each of the Closing Date and each Option Closing Date, if any, no stop order suspending the effectiveness of the Registration Statement shall have been issued and no proceedings for that purpose shall have been instituted or shall be pending or to the knowledge of the Company contemplated by the Commission and any request on the part of the Commission for additional information shall have been complied with to the reasonable satisfaction of the Representative;

(v) by the Execution Date, if required by FINRA, the Underwriters shall have received clearance from FINRA as to the amount of compensation allowable or payable to the Underwriters as described in the Registration Statement;

(vi) the Closing Shares, the Option Shares and the Warrant Shares have been approved for listing on the Trading Market; and

(vii) prior to and on each of the Closing Date and each Option Closing Date, if any: (i) there shall have been no material adverse change or development involving a prospective material adverse change in the condition or prospects or the business activities, financial or otherwise, of the Company from the latest dates as of which such condition is set forth in the Registration Statement and Prospectus; (ii) no action suit or proceeding, at law or in equity, shall have been pending or to the knowledge of the Company threatened against the Company or any Affiliate of the Company before or by any court or federal or state commission, board or other administrative agency wherein an unfavorable decision, ruling or finding may materially adversely affect the business, operations, prospects or financial condition or income of the Company, except as set forth in the Registration Statement and Prospectus; (iii) no stop order shall have been issued under the Securities Act and no proceedings therefor shall have been initiated or to the knowledge of the Company threatened by the Commission; and (iv) the Registration Statement and the Prospectus and any amendments or supplements thereto shall contain all material statements which are required to be stated therein in accordance with the Securities Act and the rules and regulations thereunder and shall conform in all material respects to the requirements of the Securities Act and the rules and regulations thereunder, and neither the Registration Statement nor the Prospectus nor any amendment or supplement thereto shall contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

**ARTICLE III.
REPRESENTATIONS AND WARRANTIES**

3.1 Representations and Warranties of the Company. The Company represents and warrants to the Underwriters as of the Execution Date, as of the Closing Date and as of each Option Closing Date, if any, as follows:

(a) Subsidiaries. All of the direct and indirect Subsidiaries of the Company are set forth in the SEC Reports. The Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all of the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities. If the Company has no Subsidiaries, all other references to the Subsidiaries or any of them in the Transaction Documents shall be disregarded.

(b) Organization and Qualification. The Company and each of the Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in a Material Adverse Effect and no Proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

(c) Authorization; Enforcement. The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement and each of the other Transaction Documents to which the Company is a party and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and each of the other Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary action on the part of the Company and no further action is required by the Company, the Board of Directors or the Company's stockholders in connection herewith or therewith other than in connection with the Required Approvals. This Agreement and each other Transaction Document to which the Company is a party has been (or upon delivery will have been) duly executed by the Company and, when delivered in accordance with the terms hereof and thereof, will constitute the valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) No Conflicts. The execution, delivery and performance by the Company of this Agreement and the other Transaction Documents to which it is a party, the issuance and sale of the Securities and the consummation by it of the transactions contemplated hereby and thereby do not and will not (i) conflict with or violate any provision of the Company's or any Subsidiary's certificate or articles of incorporation, bylaws or other organizational or charter documents, or (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, result in the creation of any Lien upon any of the properties or assets of the Company or any Subsidiary, or give to others any rights of termination, amendment, anti-dilution or similar adjustments, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing a Company or Subsidiary debt or otherwise) or other understanding to which the Company or any Subsidiary is a party or by which any property or asset of the Company or any Subsidiary is bound or affected, or (iii) subject to the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company or a Subsidiary is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company or a Subsidiary is bound or affected; except in the case of each of clauses (ii) and (iii), such as could not have or reasonably be expected to result in a Material Adverse Effect.

(e) Filings, Consents and Approvals. The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) the filing with the Commission of the Prospectus and (ii) such filings as are required to be made under applicable state securities laws (collectively, the "Required Approvals").

(f) Registration Statement. The Company has filed with the Commission the Registration Statement, including any related Prospectus or Prospectuses, for the registration of the Securities under the Securities Act, which Registration Statement has been prepared by the Company in all material respects in conformity with the requirements of the Securities Act and the rules and regulations of the Commission under the Securities Act. The Registration Statement has been declared effective by the Commission on [____], 2025 (the "Effective Date"). The Company has advised the Representative of all further information (financial and other) with respect to the Company required to be set forth therein in the Registration Statement, the Preliminary Prospectus and Prospectus. All references in this Agreement to financial statements and schedules and other information which is "contained," "included," "described," "referenced," "set forth" or "stated" in the Registration Statement, the Preliminary Prospectus or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in the Registration Statement, the Preliminary Prospectus or the Prospectus, as the case may be. No stop order suspending the effectiveness of the Registration Statement or the use of the Preliminary Prospectus or the Prospectus has been issued, and no proceeding for any such purpose is pending or has been initiated or, to the Company's knowledge, is threatened by the Commission. For purposes of this Agreement, "free writing prospectus" has the meaning set forth in Rule 405 under the Securities Act. The Company will not, without the prior consent of the Representative, prepare, use or refer to, any free writing prospectus.

(g) Issuance of Securities. The Securities are duly authorized and, when issued and paid for in accordance with the applicable Transaction Documents, will be duly and validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Warrant Shares, when issued in accordance with the terms of the Warrants, will be validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Company has reserved from its duly authorized capital stock the maximum number of shares of Common Stock issuable pursuant to this Agreement and the Warrants. The holder of the Securities will not be subject to personal liability by reason of being such holders. The Securities are not and will not be subject to the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company. All corporate action required to be taken for the authorization, issuance and sale of the Securities has been duly and validly taken. The Securities conform in all material respects to all statements with respect thereto contained in the Registration Statement.

(h) Capitalization. The capitalization of the Company is as set forth in the SEC Reports. The Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of employee stock options under the Company's stock option plans, the issuance of shares of Common Stock to employees pursuant to the Company's employee stock purchase plans and pursuant to the conversion and/or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as a result of the purchase and sale of the Securities, or as set forth in the Registration Statement, there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents or the capital stock of any Subsidiary. The issuance and sale of the Securities will not obligate the Company or any Subsidiary to issue shares of Common Stock or other securities to any Person (other than the Underwriters). There are no outstanding securities or instruments of the Company or any Subsidiary with any provision that adjusts the exercise, conversion, exchange or reset price of such security or instrument upon an issuance of securities by the Company or any Subsidiary. There are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. All of the outstanding shares of capital stock of the Company are duly authorized, validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. The authorized shares of the Company conform in all material respects to all statements relating thereto contained in the Registration Statement, the Preliminary Prospectus and the Prospectus. The offers and sales of the Company's securities were at all relevant times either registered under the Securities Act and the applicable state securities or Blue Sky laws or, based in part on the representations and warranties of the purchasers, exempt from such registration requirements. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. There are no stockholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's stockholders.

(i) SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, together with the Preliminary Prospectus and the Prospectus, being collectively referred to herein as the “SEC Reports”). As of their respective dates, after taking into account any amendments, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing after taking into account the relevant amendments that have been filed to such reports. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved (“GAAP”), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments. The agreements and documents described in the Registration Statement, the Preliminary Prospectus, the Prospectus and the SEC Reports conform to the descriptions thereof contained therein and there are no agreements or other documents required by the Securities Act and the rules and regulations thereunder to be described in the Registration Statement, the Preliminary Prospectus, the Prospectus or the SEC Reports or to be filed with the Commission as exhibits to the Registration Statement, that have not been so described or filed. Each agreement or other instrument (however characterized or described) to which the Company is a party or by which it is or may be bound or affected and (i) that is referred to in the Registration Statement, the Preliminary Prospectus, the Prospectus or the SEC Reports, or (ii) is material to the Company’s business, has been duly authorized and validly executed by the Company, is in full force and effect in all material respects and is enforceable against the Company and, to the Company’s knowledge, the other parties thereto, in accordance with its terms, except (x) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors’ rights generally, (y) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws, and (z) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefore may be brought. None of such agreements or instruments has been assigned by the Company, and neither the Company nor, to the best of the Company’s knowledge, any other party is in default thereunder and, to the best of the Company’s knowledge, no event has occurred that, with the lapse of time or the giving of notice, or both, would constitute a default thereunder. To the best of the Company’s knowledge, performance by the Company of the material provisions of such agreements or instruments will not result in a violation of any existing applicable law, rule, regulation, judgment, order or decree of any governmental agency or court, domestic or foreign, having jurisdiction over the Company or any of its assets or businesses, including, without limitation, those relating to environmental laws and regulations.

(j) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof, (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any material liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to GAAP or disclosed in filings made with the Commission, (iii) the Company has not altered its method of accounting other than as disclosed in the SEC Reports, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock, (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company stock option plans and (vi) no officer or director of the Company has resigned from any position with the Company. The Company does not have pending before the Commission any request for confidential treatment of information. Except for the issuance of the Securities contemplated by this Agreement, no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least one Trading Day prior to the date that this representation is made. Unless otherwise disclosed in an SEC Report filed prior to the date hereof, the Company has not: (i) issued any securities or incurred any liability or obligation, direct or contingent, for borrowed money; or (ii) declared or paid any dividend or made any other distribution on or in respect to its capital stock.

(k) Litigation. There is no action, suit, inquiry, notice of violation, proceeding or investigation pending or, to the knowledge of the Company, threatened against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, governmental or administrative agency or regulatory authority (federal, state, county, local or foreign) (collectively, an “Action”) which (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the Securities or (ii) could, if there were an unfavorable decision, have or reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any Subsidiary, nor to the Company’s knowledge, any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or officer of the Company. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act.

(l) Labor Relations. No labor dispute exists or, to the knowledge of the Company, is imminent with respect to any of the employees of the Company, which could reasonably be expected to result in a Material Adverse Effect. None of the Company’s or its Subsidiaries’ employees is a member of a union that relates to such employee’s relationship with the Company or such Subsidiary, and neither the Company nor any of its Subsidiaries is a party to a collective bargaining agreement, and the Company and its Subsidiaries believe that their relationships with their employees are good. To the knowledge of the Company, no executive officer of the Company or any Subsidiary, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant in favor of any third party, and the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any liability with respect to any of the foregoing matters. The Company and its Subsidiaries are in compliance with all applicable U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(m) Compliance. Neither the Company nor any Subsidiary: (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any judgment, decree or order of any court, arbitrator or other governmental authority or (iii) is or has been in violation of any statute, rule, ordinance or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws relating to taxes, environmental protection, occupational health and safety, product quality and safety and employment and labor matters, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(n) Regulatory Permits. The Company and the Subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct their respective businesses as described in the SEC Reports, except where the failure to possess such permits could not reasonably be expected to result in a Material Adverse Effect (each, a “Material Permit”), and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any Material Permit. The disclosures in the Registration Statement concerning the effects of federal, state, local and all foreign regulation on the Company’s business as currently contemplated are correct in all material respects.

(o) Title to Assets. The Company and the Subsidiaries have good and marketable title in fee simple to, or have valid and marketable rights to lease or otherwise use, all real property and all personal property that is material to the business of the Company and the Subsidiaries, in each case free and clear of all Liens, except for (i) Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries and (ii) Liens for the payment of federal, state or other taxes, for which appropriate reserves have been made therefor in accordance with GAAP, and the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and the Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Subsidiaries are in compliance.

(p) Intellectual Property. The Company and the Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights necessary or required for use in connection with their respective businesses as described in the SEC Reports and which the failure to do so could have a Material Adverse Effect (collectively, the “Intellectual Property Rights”). None of the Company nor any Subsidiary has received written, or to the knowledge of the Company other, notice that any of, the Intellectual Property Rights has expired, terminated or been abandoned, or is expected to expire or terminate or be abandoned, within two (2) years from the date of this Agreement. Neither the Company nor any Subsidiary has received, since the date of the latest audited financial statements included within the SEC Reports, a written notice of a claim or otherwise has any knowledge that the Intellectual Property Rights violate or infringe upon the rights of any Person. To the knowledge of the Company, all such Intellectual Property Rights are enforceable and there is no existing infringement by another Person of any of the Intellectual Property Rights. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(q) Insurance. The Company and the Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which the Company and the Subsidiaries are engaged, including, but not limited to, directors and officers insurance coverage. Neither the Company nor any Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business without a significant increase in cost.

(r) Transactions With Affiliates and Employees. Except as set forth in the SEC Reports, none of the officers or directors of the Company or any Subsidiary and, to the knowledge of the Company, none of the employees of the Company or any Subsidiary is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, providing for the borrowing of money from or lending of money to or otherwise requiring payments to or from, any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee, stockholder, member or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any stock option plan of the Company.

(s) Sarbanes-Oxley; Internal Accounting Controls. The Company and the Subsidiaries are in compliance in all material respects with any and all applicable requirements of the Sarbanes-Oxley Act of 2002 that are effective as of the date hereof, and any and all applicable rules and regulations promulgated by the Commission thereunder that are effective as of the date hereof and as of the Closing Date. Except as disclosed in the Registration Statement, the Preliminary Prospectus and the Prospectus, the Company and the Subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company and the Subsidiaries have established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the Company and the Subsidiaries and designed such disclosure controls and procedures to provide reasonable assurance that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the disclosure controls and procedures of the Company and the Subsidiaries as of the end of the period covered by the most recently filed periodic report under the Exchange Act (such date, the "Evaluation Date"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no changes in the internal control over financial reporting (as such term is defined in the Exchange Act) of the Company and its Subsidiaries that have materially affected, or is reasonably likely to materially affect, the internal control over financial reporting of the Company and its Subsidiaries.

(t) Certain Fees. Except as set forth in the Prospectus, no brokerage or finder's fees or commissions are or will be payable by the Company, any Subsidiary or Affiliate of the Company to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. To the Company's knowledge, there are no other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its stockholders that may affect the Underwriters' compensation, as determined by FINRA. Except as previously disclosed to the Representative, the Company has not made any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the twelve months prior to the Execution Date. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein.

(u) Investment Company. The Company is not, and to its knowledge, is not an Affiliate of, and immediately after receipt of payment for the Securities will not be, or, to its knowledge, be an Affiliate of, an "investment company" within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become an "investment company" subject to registration under the Investment Company Act of 1940, as amended.

(v) Registration Rights. No Person has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary.

(w) Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act, and, except as disclosed in the Registration Statement, the Preliminary Prospectus and the Prospectus, the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the Commission is contemplating terminating such registration. Except as disclosed in the SEC Reports, the Company has not, in the 12 months preceding the date hereof, received notice from any Trading Market on which the Common Stock is or has been listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Trading Market. The Company is, and has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements. The Common Stock is currently eligible for electronic transfer through the Depository Trust Company or another established clearing corporation and the Company is current in payment of the fees to the Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

(x) Application of Takeover Protections. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's certificate of incorporation (or similar charter documents) or the laws of its state of incorporation that is or could become applicable as a result of the Underwriters and the Company fulfilling their obligations or exercising their rights under the Transaction Documents.

(y) Disclosure: 10b-5. The Registration Statement (and any further documents to be filed with the Commission) contains all exhibits and schedules as required by the Securities Act. Each of the Registration Statement and any post-effective amendment thereto, if any, at the time it became effective, complied in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations under the Securities Act and did not and, as amended or supplemented, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Preliminary Prospectus, Prospectus and any Prospectus Supplement, each as of its respective date, comply in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations. Each of the Preliminary Prospectus, Prospectus and any Prospectus Supplement, as amended or supplemented, did not and will not contain as of the date thereof any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The SEC Reports, when they were filed with the Commission, conformed in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, and none of such documents, when they were filed with the Commission, contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein (with respect to the SEC Reports incorporated by reference in the Preliminary Prospectus, Prospectus or any Prospectus Supplement), in light of the circumstances under which they were made not misleading; and any further documents so filed and incorporated by reference in the Preliminary Prospectus, Prospectus or any Prospectus Supplement, when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, as applicable, and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made not misleading. No post-effective amendment to the Registration Statement reflecting any facts or events arising after the date thereof which represent, individually or in the aggregate, a fundamental change in the information set forth therein is required to be filed with the Commission. Notwithstanding the foregoing, the Company makes no representation or warranty with respect to any underwriter information provided for use in the Registration Statement and Prospectus, which shall be limited to the information in the section titled “Underwriting” in the Registration Statement with respect to the selling concessions and the information in the subsection of the Underwriting section with respect to “Stabilization, Short Positions and Penalty Bids.” There are no documents required to be filed with the Commission in connection with the transaction contemplated hereby that (x) have not been filed as required pursuant to the Securities Act or (y) will not be filed within the requisite time period. There are no contracts or other documents required to be described in the Preliminary Prospectus, Prospectus or any Prospectus Supplement, or to be filed as exhibits or schedules to the Registration Statement, which have not been described or filed as required. The press releases disseminated by the Company during the twelve months preceding the date of this Agreement taken as a whole do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made and when made, not misleading.

(z) No Integrated Offering. Neither the Company, nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of any applicable shareholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated.

(aa) Solvency. Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, (i) the fair saleable value of the Company's assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within six months from the Closing Date. The SEC Reports sets forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. Neither the Company nor any Subsidiary is in default with respect to any Indebtedness.

(bb) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, the Company and its Subsidiaries each (i) has made or filed, or secured extensions for the filing of, all United States federal, state and local income and all foreign income and franchise tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim. The provisions for taxes payable, if any, shown on the financial statements filed with or as part of the Registration Statement are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. The term "taxes" mean all federal, state, local, foreign, and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments, or charges of any kind whatsoever, together with any interest and any penalties, additions to tax, or additional amounts with respect thereto. The term "returns" means all returns, declarations, reports, statements, and other documents required to be filed in respect to taxes.

(cc) Foreign Corrupt Practices. Neither the Company nor any Subsidiary, nor to the knowledge of the Company or any Subsidiary, any agent or other person acting on behalf of the Company or any Subsidiary, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company or any Subsidiary (or made by any person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of FCPA. The Company has taken reasonable steps to ensure that its accounting controls and procedures are sufficient to cause the Company to comply in all material respects with the FCPA.

(dd) Accountants. To the knowledge of the Company, the Company Auditor, whose report is filed with the Commission as part of the Registration Statement, is an independent registered public accounting firm as required by the Securities Act and the rules and regulations thereunder. The Company Auditor has not, during the periods covered by the financial statements included in the Prospectus, provided to the Company any non-audit services, as such term is used in Section 10A(g) of the Exchange Act.

(ee) FDA. As to each product candidate subject to the jurisdiction of the U.S. Food and Drug Administration (“FDA”) under the Federal Food, Drug and Cosmetic Act (“FDCA”), as amended, and the regulations thereunder that is manufactured, packaged, labeled, and/or tested by the Company or any of its Subsidiaries (each such product, a “Pharmaceutical Product”), such Pharmaceutical Product is being manufactured, packaged, labeled, and/or tested by the Company in compliance with all applicable requirements under FDCA and similar laws, rules and regulations relating to establishment registration, investigational use, good manufacturing practices, good laboratory practices, good clinical practices, labeling, record keeping and filing of reports, except where the failure to be in compliance would not have a Material Adverse Effect. There is no pending, completed or, to the Company’s knowledge, threatened, action (including any lawsuit, arbitration, or legal or administrative or regulatory proceeding, charge, complaint, or investigation) against the Company or any of its Subsidiaries, and none of the Company or any of its Subsidiaries has received any notice, warning letter or other communication from the FDA or any other governmental entity, which (i) contests the manufacturing or packaging of, the testing of, or the labeling of any Pharmaceutical Product, (ii) requests the recall, suspension, or seizure of any Pharmaceutical Product, (iii) imposes a clinical hold on any clinical investigation by the Company or any of its Subsidiaries, (iv) enjoins production at any facility of the Company or any of its Subsidiaries, (v) enters or proposes to enter into a consent decree of permanent injunction with the Company or any of its Subsidiaries, or (vi) otherwise alleges any violation of any laws, rules or regulations by the Company or any of its Subsidiaries, and which, either individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect. The properties, business and operations of the Company have been and are being conducted in all material respects in accordance with all applicable laws, rules and regulations of the FDA. The Company has not been informed by the FDA that the FDA will prohibit the marketing, sale, license or use in the United States of any product proposed to be developed, produced or marketed by the Company nor has the FDA expressed any concern as to approving or clearing for marketing any product being developed or proposed to be developed by the Company.

(ff) Stock Option Plans. Each stock option granted by the Company under the Company’s stock option plan was granted (i) in accordance with the terms of the Company’s stock option plan and (ii) with an exercise price at least equal to the fair market value of the Common Stock on the date such stock option would be considered granted under GAAP and applicable law. No stock option granted under the Company’s stock option plan has been backdated. The Company has not knowingly granted, and there is no and has been no Company policy or practice to knowingly grant, stock options prior to, or otherwise knowingly coordinate the grant of stock options with, the release or other public announcement of material information regarding the Company or its Subsidiaries or their financial results or prospects.

(gg) Office of Foreign Assets Control. Neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any Subsidiary is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department.

(hh) U.S. Real Property Holding Corporation. The Company is not and has never been a U.S. real property holding corporation within the meaning of Section 897 of the Internal Revenue Code of 1986, as amended, and the Company shall so certify upon the Representative's request.

(ii) Bank Holding Company Act. Neither the Company nor any of its Subsidiaries or Affiliates is subject to the Bank Holding Company Act of 1956, as amended (the "BHCA") and to regulation by the Board of Governors of the Federal Reserve System (the "Federal Reserve"). Neither the Company nor any of its Subsidiaries or Affiliates owns or controls, directly or indirectly, five percent (5%) or more of the outstanding shares of any class of voting securities or twenty-five percent (25%) or more of the total equity of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve. Neither the Company nor any of its Subsidiaries or Affiliates exercises a controlling influence over the management or policies of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve.

(jj) Money Laundering. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record-keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, applicable money laundering statutes and applicable rules and regulations thereunder (collectively, the "Money Laundering Laws"), and no Action or Proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company or any Subsidiary, threatened.

(kk) D&O Questionnaires. To the Company's knowledge, all information contained in the questionnaires completed by each of the Company's directors and officers immediately prior to the Offering as well as in the Lock-Up Agreement provided to the Underwriters is true and correct in all respects and the Company has not become aware of any information which would cause the information disclosed in such questionnaires become inaccurate and incorrect.

(ll) FINRA Affiliation. No officer, director or, to the Company's knowledge, any beneficial owner of 5% or more of the Company's unregistered securities has any direct or indirect affiliation or association with any FINRA member (as determined in accordance with the rules and regulations of FINRA) that is participating in the Offering. The Company will advise the Representative and EGS if it learns that any officer, director or owner of 5% or more of the Company's outstanding shares of Common Stock or Common Stock Equivalents is or becomes an affiliate or associated person of a FINRA member firm.

(mm) Officers' Certificate. Any certificate signed by any duly authorized officer of the Company and delivered to the Representative or EGS shall be deemed a representation and warranty by the Company to the Underwriters as to the matters covered thereby.

(nn) Board of Directors. The Board of Directors is comprised of the persons set forth in the SEC Reports. The qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder applicable to the Company and the rules of the Trading Market. At least one member of the Board of Directors qualifies as a "financial expert" as such term is defined under the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder and the rules of the Trading Market. In addition, at least a majority of the persons serving on the Board of Directors qualify as "independent" as defined under the rules of the Trading Market.

(oo) Cybersecurity. (i)(x) To the Company's knowledge, there has been no security breach or other compromise of or relating to any of the Company's or any Subsidiary's information technology and computer systems, networks, hardware, software, data (including the data of its respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of it), equipment or technology (collectively, "IT Systems and Data") and (y) the Company and the Subsidiaries have not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any security breach or other compromise to its IT Systems and Data; (ii) the Company and the Subsidiaries are presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, individually or in the aggregate, have a Material Adverse Effect; (iii) the Company and the Subsidiaries have implemented and maintained commercially reasonable safeguards to maintain and protect its material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and Data; and (iv) the Company and the Subsidiaries have implemented backup and disaster recovery technology consistent with industry standards and practices.

(pp) Compliance with Data Privacy Laws. (i) The Company and the Subsidiaries are, and at all times during the last three (3) years were, in compliance with all applicable state, federal and foreign data privacy and security laws and regulations, including, without limitation, the European Union General Data Protection Regulation (“GDPR”) (EU 2016/679) (collectively, “Privacy Laws”); (ii) the Company and the Subsidiaries have in place, comply with, and take appropriate steps reasonably designed to ensure compliance with their policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling and analysis of Personal Data (as defined below) (the “Policies”); (iii) the Company provides accurate notice of its applicable Policies to its customers, employees, third party vendors and representatives as required by the Privacy Laws; and (iv) applicable Policies provide accurate and sufficient notice of the Company’s then-current privacy practices relating to its subject matter, and do not contain any material omissions of the Company’s then-current privacy practices, as required by Privacy Laws. “Personal Data” means (i) a natural person’s name, street address, telephone number, email address, photograph, social security number, bank information, or customer or account number; (ii) any information which would qualify as “personally identifying information” under the Federal Trade Commission Act, as amended; (iii) “personal data” as defined by GDPR; and (iv) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any identifiable data related to an identified person’s health or sexual orientation. (i) None of such disclosures made or contained in any of the Policies have been inaccurate, misleading, or deceptive in violation of any Privacy Laws and (ii) the execution, delivery and performance of the Transaction Documents will not result in a breach of any Privacy Laws or Policies. Neither the Company nor the Subsidiaries (i) to the knowledge of the Company, has received written notice of any actual or potential liability of the Company or the Subsidiaries under, or actual or potential violation by the Company or the Subsidiaries of, any of the Privacy Laws; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation or other corrective action pursuant to any regulatory request or demand pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement by or with any court or arbitrator or governmental or regulatory authority that imposed any obligation or liability under any Privacy Law.

(qq) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with all federal, state, local and foreign laws relating to pollution or protection of human health or the environment (including ambient air, surface water, groundwater, land surface or subsurface strata), including laws relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, or toxic or hazardous substances or wastes (collectively, “Hazardous Materials”) into the environment, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials, as well as all authorizations, codes, decrees, demands, or demand letters, injunctions, judgments, licenses, notices or notice letters, orders, permits, plans or regulations, issued, entered, promulgated or approved thereunder (“Environmental Laws”); (ii) have received all permits licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses; and (iii) are in compliance with all terms and conditions of any such permit, license or approval where in each clause (i), (ii) and (iii), the failure to so comply could be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect.

**ARTICLE IV.
OTHER AGREEMENTS OF THE PARTIES**

4.1 Amendments to Registration Statement. The Company has delivered, or will as promptly as practicable deliver, to the Underwriters complete conformed copies of the Registration Statement and of each consent and certificate of experts, as applicable, filed as a part thereof, and conformed copies of the Registration Statement (without exhibits), the Prospectus and the Prospectus Supplement, as amended or supplemented, in such quantities and at such places as an Underwriter reasonably requests. Neither the Company nor any of its directors and officers has distributed and none of them will distribute, prior to the Closing Date, any offering material in connection with the offering and sale of the Securities other than the Prospectus, the Prospectus Supplement, the Registration Statement, and copies of the documents incorporated by reference therein. The Company shall not file any such amendment or supplement to which the Representative shall reasonably object in writing.

4.2 Federal Securities Laws.

(a) Compliance. During the time when a Prospectus is required to be delivered under the Securities Act, the Company will use its best efforts to comply with all requirements imposed upon it by the Securities Act and the rules and regulations thereunder and the Exchange Act and the rules and regulations thereunder, as from time to time in force, so far as necessary to permit the continuance of sales of or dealings in the Securities in accordance with the provisions hereof and the Prospectus. If at any time when a Prospectus relating to the Securities is required to be delivered under the Securities Act, any event shall have occurred as a result of which, in the opinion of counsel for the Company or counsel for the Underwriters, the Prospectus, as then amended or supplemented, includes an untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, or if it is necessary at any time to amend the Prospectus to comply with the Securities Act, the Company will notify the Underwriters promptly and prepare and file with the Commission, subject to Section 4.1 hereof, an appropriate amendment or supplement in accordance with Section 10 of the Securities Act.

(b) Filing of Final Prospectus. The Company will file the Prospectus (in form and substance satisfactory to the Representative) with the Commission pursuant to the requirements of Rule 424.

(c) Exchange Act Registration. For a period of two years from the Execution Date, the Company will use its best efforts to maintain the registration of the Common Stock under the Exchange Act. The Company will not deregister the Common Stock under the Exchange Act without the prior written consent of the Representative.

(d) Free Writing Prospectuses. The Company represents and agrees that it has not made and will not make any offer relating to the Securities that would constitute an issuer free writing prospectus, as defined in Rule 433 of the rules and regulations under the Securities Act, without the prior written consent of the Representative. Any such free writing prospectus consented to by the Representative is herein referred to as a “Permitted Free Writing Prospectus.” The Company represents that it will treat each Permitted Free Writing Prospectus as an “issuer free writing prospectus” as defined in rule and regulations under the Securities Act, and has complied and will comply with the applicable requirements of Rule 433 of the Securities Act, including timely Commission filing where required, legending and record keeping.

4.3 Delivery to the Underwriters of Prospectuses. The Company will deliver to the Underwriters, without charge, from time to time during the period when the Prospectus is required to be delivered under the Securities Act or the Exchange Act such number of copies of each Prospectus as the Underwriters may reasonably request and, as soon as the Registration Statement or any amendment or supplement thereto becomes effective, deliver to you two original executed Registration Statements, including exhibits, and all post-effective amendments thereto and copies of all exhibits filed therewith or incorporated therein by reference and all original executed consents of certified experts.

4.4 Effectiveness and Events Requiring Notice to the Underwriters. The Company will use its reasonable best efforts to cause the Registration Statement to remain effective with a current prospectus until the later of nine (9) months from the Execution Date and the date on which the Warrants are no longer outstanding, and will notify the Underwriters and holders of the Warrants promptly and confirm the notice in writing: (i) of the effectiveness of the Registration Statement and any amendment thereto; (ii) of the issuance by the Commission of any stop order or of the initiation, or the threatening, of any proceeding for that purpose; (iii) of the issuance by any state securities commission of any proceedings for the suspension of the qualification of the Securities for offering or sale in any jurisdiction or of the initiation, or the threatening, of any proceeding for that purpose; (iv) of the mailing and delivery to the Commission for filing of any amendment or supplement to the Registration Statement or Prospectus; (v) of the receipt of any comments or request for any additional information from the Commission; and (vi) of the happening of any event during the period described in this Section 4.4 that, in the judgment of the Company, makes any statement of a material fact made in the Registration Statement or the Prospectus untrue or that requires the making of any changes in the Registration Statement or the Prospectus in order to make the statements therein, in light of the circumstances under which they were made, not misleading. If the Commission or any state securities commission shall enter a stop order or suspend such qualification at any time, the Company will use its reasonable best efforts to obtain promptly the lifting of such order.

4.5 Expenses Related to the Offering.

(a) General Expenses Related to the Offering. The Company hereby agrees to pay on each of the Closing Date and each Option Closing Date, if any, to the extent not paid at the Closing Date, all expenses incident to the performance of the obligations of the Company under this Agreement, including, but not limited to: (a) all filing fees and communication expenses relating to the registration of the Securities to be sold in the Offering (including the Option Securities) with the Commission; (b) all FINRA Public Offering Filing System fees associated with the review of the Offering by FINRA; all fees and expenses relating to the listing of such Closing Shares, Option Shares and Warrant Shares on the Trading Market and such other stock exchanges as the Company and the Representative together determine; (c) all fees, expenses and disbursements relating to the registration or qualification of such Securities under the “blue sky” securities laws of such states and other foreign jurisdictions as the Representative may reasonably designate; (d) the costs of all mailing and printing of the underwriting documents (including, without limitation, this Agreement, any Blue Sky Surveys and, if appropriate, any Agreement Among Underwriters, Selected Dealers’ Agreement, Underwriters’ Questionnaire and Power of Attorney), Registration Statements, Prospectuses and all amendments, supplements and exhibits thereto and as many preliminary and final Prospectuses as the Representative may reasonably deem necessary; (e) the costs and expenses of the Company’s public relations firm; (f) the costs of preparing, printing and delivering the Securities; (g) fees and expenses of the Transfer Agent for the Securities (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company), including, without limitation, fees and expenses pursuant to the Warrant Agency Agreement; (h) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Underwriters; (i) the fees and expenses of the Company’s accountants; (j) the fees and expenses of the Company’s legal counsel and other agents and representatives; and (k) the Underwriters’ costs of mailing prospectuses to prospective investors. The Underwriters may also deduct from the net proceeds of the Offering payable to the Company on the Closing Date, or each Option Closing Date, if any, the expenses set forth herein to be paid by the Company to the Underwriters.

(b) Expenses of the Representative. The Company further agrees that on the Closing Date, the Company will reimburse the Representative up to \$160,000 for fees and expenses of legal counsel and other out-of-pocket expenses, by deduction from the proceeds of the Offering contemplated herein.

4.6 Application of Net Proceeds. The Company will apply the net proceeds from the Offering received by it in a manner consistent with the application described under the caption “Use of Proceeds” in the Prospectus.

4.7 [Reserved]

4.8 Stabilization. Neither the Company, nor, to its knowledge, any of its employees, directors or shareholders (without the consent of the Representative) has taken or will take, directly or indirectly, any action designed to or that has constituted or that might reasonably be expected to cause or result in, under the Exchange Act, or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities.

4.9 Internal Controls. The Company will maintain a system of internal accounting controls sufficient to provide reasonable assurances that: (i) transactions are executed in accordance with management’s general or specific authorization; (ii) transactions are recorded as necessary in order to permit preparation of financial statements in accordance with GAAP and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management’s general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

4.10 Accountants. The Company shall continue to retain a nationally recognized independent certified public accounting firm for a period of at least three years after the Execution Date. The Underwriters acknowledge that the Company Auditor is acceptable to the Underwriters.

4.11 FINRA. For a period of one year from the Execution Date, the Company shall promptly advise the Underwriters (who shall make an appropriate filing with FINRA) if the Company is aware that any 5% or greater shareholder of the Company becomes an affiliate or associated person of an Underwriter.

4.12 No Fiduciary Duties. The Company acknowledges and agrees that the Underwriters' responsibility to the Company is solely contractual and commercial in nature, based on arms-length negotiations and that neither the Underwriters nor their affiliates or any selected dealer shall be deemed to be acting in a fiduciary capacity, or otherwise owes any fiduciary duty to the Company or any of its affiliates in connection with the Offering and the other transactions contemplated by this Agreement. Notwithstanding anything in this Agreement to the contrary, the Company acknowledges that the Underwriters may have financial interests in the success of the Offering that are not limited to the difference between the price to the public and the purchase price paid to the Company by the Underwriters for the shares and the Underwriters have no obligation to disclose, or account to the Company for, any of such additional financial interests. The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against the Underwriters with respect to any breach or alleged breach of fiduciary duty.

4.13 Warrant Shares. If all or any portion of a Warrant is exercised at a time when there is an effective registration statement to cover the issuance of the Warrant Shares or if the Warrant is exercised via cashless exercise at a time when such Warrant Shares would be eligible for resale under Rule 144 by a non-affiliate of the Company, the Warrant Shares issued pursuant to any such exercise shall be issued free of all restrictive legends. If at any time following the date hereof the Registration Statement (or any subsequent registration statement registering the sale or resale of the Warrant Shares) is not effective or is not otherwise available for the sale of the Warrant Shares, the Company shall immediately notify the holders of the Warrants in writing that such registration statement is not then effective and thereafter shall promptly notify such holders when the registration statement is effective again and available for the sale of the Warrant Shares (it being understood and agreed that the foregoing shall not limit the ability of the Company to issue, or any holder thereof to sell, any of the Warrant Shares in compliance with applicable federal and state securities laws).

4.14 Board Composition and Board Designations. The Company shall ensure that: (i) the qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder and with the listing requirements of the Trading Market and (ii) if applicable, at least one member of the Board of Directors qualifies as a “financial expert” as such term is defined under the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder.

4.15 Securities Laws Disclosure; Publicity. At the request of the Representative, by [9:00 a.m.] (New York City time) on the date hereof, the Company shall issue a press release disclosing the material terms of the Offering. The Company and the Representative shall consult with each other in issuing any other press releases with respect to the Offering, and neither the Company nor any Underwriter shall issue any such press release nor otherwise make any such public statement without the prior consent of the Company, with respect to any press release of such Underwriter, or without the prior consent of such Underwriter, with respect to any press release of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law, in which case the disclosing party shall promptly provide the other party with prior notice of such public statement or communication. The Company will not issue press releases or engage in any other publicity, without the Representative’s prior written consent, for a period ending at 5:00 p.m. (New York City time) on the first business day following the 45th day following the Closing Date, other than normal and customary releases issued in the ordinary course of the Company’s business.

4.16 Shareholder Rights Plan. No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that any Underwriter of the Securities is an “Acquiring Person” under any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or similar anti-takeover plan or arrangement in effect or hereafter adopted by the Company, or that any Underwriter of Securities could be deemed to trigger the provisions of any such plan or arrangement, by virtue of receiving Securities.

4.17 Reservation of Common Stock. As of the date hereof, the Company has reserved and the Company shall continue to reserve and keep available at all times, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue Option Shares pursuant to the Option and Warrant Shares pursuant to any exercise of the Warrants.

4.18 Listing of Common Stock. The Company hereby agrees to use reasonable best efforts to maintain the listing or quotation of the Common Stock on the Trading Market on which it is currently listed, and concurrently with the Closing, the Company shall apply to list or quote all of the Closing Shares, Option Shares and Warrant Shares on such Trading Market and promptly secure the listing of all of the Closing Shares, Option Shares and Warrant Shares on such Trading Market. The Company further agrees, if the Company applies to have the Common Stock traded on any other Trading Market, it will then include in such application all of the Closing Shares, Option Shares and Warrant Shares, and will take such other action as is necessary to cause all of the Closing Shares, Option Shares and Warrant Shares to be listed or quoted on such other Trading Market as promptly as possible. The Company will then take all action reasonably necessary to continue the listing and trading of its Common Stock on a Trading Market and will comply in all respects with the Company’s reporting, filing and other obligations under the bylaws or rules of the Trading Market. The Company agrees to use reasonable best efforts to maintain the eligibility of the Common Stock for electronic transfer through the Depository Trust Company or another established clearing corporation, including, without limitation, by timely payment of fees to the Depository Trust Company or such other established clearing corporation in connection with such electronic transfer.

4.19 Subsequent Equity Sales.

(a) From the date hereof until sixty (60) days after the Closing Date, neither the Company nor any Subsidiary shall issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents or file any registration statement or amendment or supplement thereto, other than the Prospectus.

(b) From the date hereof until one hundred eighty (180) days after the Closing Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction. “Variable Rate Transaction” means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive, additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon, and/or varies with, the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock or (ii) enters into, or effects a transaction under, any agreement, including, but not limited to, an equity line of credit or an “at-the-market offering”, whereby the Company may issue securities at a future determined price regardless of whether shares pursuant to such agreement have actually been issued and regardless of whether such agreement is subsequently canceled; provided, however, that, after the prohibition period in Section 4.19(a) herein, the entry into and/or issuance of shares of Common Stock in an “at the market” offering with the Representative as sales agent shall not be deemed a Variable Rate Transaction. Any Underwriter shall be entitled to obtain injunctive relief against the Company to preclude any such issuance, which remedy shall be in addition to any right to collect damages.

(c) Notwithstanding the foregoing, this Section 4.19 shall not apply in respect of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance.

4.20 Research Independence. The Company acknowledges that each Underwriter's research analysts and research departments, if any, are required to be independent from their respective investment banking divisions and are subject to certain regulations and internal policies, and that such Underwriter's research analysts may hold and make statements or investment recommendations and/or publish research reports with respect to the Company and/or the offering that differ from the views of its investment bankers. The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against such Underwriter with respect to any conflict of interest that may arise from the fact that the views expressed by their independent research analysts and research departments may be different from or inconsistent with the views or advice communicated to the Company by such Underwriter's investment banking divisions. The Company acknowledges that the Representative is a full service securities firm and as such from time to time, subject to applicable securities laws, may effect transactions for its own account or the account of its customers and hold long or short position in debt or equity securities of the Company.

**ARTICLE V.
DEFAULT BY UNDERWRITERS**

If on the Closing Date or any Option Closing Date, if any, any Underwriter shall fail to purchase and pay for the portion of the Closing Securities or Option Securities, as the case may be, which such Underwriter has agreed to purchase and pay for on such date (otherwise than by reason of any default on the part of the Company), the Representative, or if the Representative is the defaulting Underwriter, the non-defaulting Underwriters, shall use their reasonable efforts to procure within 36 hours thereafter one or more of the other Underwriters, or any others, to purchase from the Company such amounts as may be agreed upon and upon the terms set forth herein, the Closing Securities or Option Securities, as the case may be, which the defaulting Underwriter or Underwriters failed to purchase. If during such 36 hours the Representative shall not have procured such other Underwriters, or any others, to purchase the Closing Securities or Option Securities, as the case may be, agreed to be purchased by the defaulting Underwriter or Underwriters, then (a) if the aggregate number of Closing Securities or Option Securities, as the case may be, with respect to which such default shall occur does not exceed 10% of the Closing Securities or Option Securities, as the case may be, covered hereby, the other Underwriters shall be obligated, severally, in proportion to the respective numbers of Closing Securities or Option Securities, as the case may be, which they are obligated to purchase hereunder, to purchase the Closing Securities or Option Securities, as the case may be, which such defaulting Underwriter or Underwriters failed to purchase, or (b) if the aggregate number of Closing Securities or Option Securities, as the case may be, with respect to which such default shall occur exceeds 10% of the Closing Securities or Option Securities, as the case may be, covered hereby, the Company or the Representative will have the right to terminate this Agreement without liability on the part of the non-defaulting Underwriters or of the Company except to the extent provided in Article VI hereof. In the event of a default by any Underwriter or Underwriters, as set forth in this Article V, the applicable Closing Date may be postponed for such period, not exceeding seven days, as the Representative, or if the Representative is the defaulting Underwriter, the non-defaulting Underwriters, may determine in order that the required changes in the Prospectus or in any other documents or arrangements may be effected. The term "Underwriter" includes any Person substituted for a defaulting Underwriter. Any action taken under this Section shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

**ARTICLE VI.
INDEMNIFICATION**

6.1 Indemnification of the Underwriters. Subject to the conditions set forth below, the Company agrees to indemnify and hold harmless each Underwriter, and each dealer selected by each Underwriter that participates in the offer and sale of the Securities (each a “Selected Dealer”) and each of their respective directors, officers and employees and each Person, if any, who controls such Underwriter or any Selected Dealer (“Controlling Person”) within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, against any and all loss, liability, claim, damage and expense whatsoever (including but not limited to any and all legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, whether arising out of any action between such Underwriter and the Company or between such Underwriter and any third party or otherwise) to which they or any of them may become subject under the Securities Act, the Exchange Act or any other statute or at common law or otherwise or under the laws of foreign countries, arising out of or based upon any Proceeding, commenced or threatened (whether or not such Underwriter is a target of or party to such Proceeding), or arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in (i) any Preliminary Prospectus, if any, the Registration Statement or the Prospectus (as from time to time each may be amended and supplemented); (ii) any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Securities, including any “road show” or investor presentations made to investors by the Company (whether in person or electronically); or (iii) any application or other document or written communication (in this Article VI, collectively called “application”) executed by the Company or based upon written information furnished by the Company in any jurisdiction in order to qualify the Securities under the securities laws thereof or filed with the Commission, any state securities commission or agency, Trading Market or any securities exchange; or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, unless such statement or omission was made in reliance upon and in conformity with written information furnished to the Company with respect to the applicable Underwriter by or on behalf of such Underwriter expressly for use in any Preliminary Prospectus, if any, the Registration Statement or Prospectus, or any amendment or supplement thereto, or in any application, as the case may be. With respect to any untrue statement or omission or alleged untrue statement or omission made in the Preliminary Prospectus, if any, the indemnity agreement contained in this Section 6.1 shall not inure to the benefit of an Underwriter to the extent that any loss, liability, claim, damage or expense of such Underwriter results from the fact that a copy of the Prospectus was not given or sent to the Person asserting any such loss, liability, claim or damage at or prior to the written confirmation of sale of the Securities to such Person as required by the Securities Act and the rules and regulations thereunder, and if the untrue statement or omission has been corrected in the Prospectus, unless such failure to deliver the Prospectus was a result of non-compliance by the Company with its obligations under this Agreement. The Company agrees promptly to notify each Underwriter of the commencement of any litigation or proceedings against the Company or any of its officers, directors or Controlling Persons in connection with the issue and sale of the Public Securities or in connection with the Registration Statement or Prospectus.

6.2 Procedure. If any action is brought against an Underwriter, a Selected Dealer or a Controlling Person in respect of which indemnity may be sought against the Company pursuant to Section 6.1, such Underwriter, such Selected Dealer or Controlling Person, as the case may be, shall promptly notify the Company in writing of the institution of such action and the Company shall assume the defense of such action, including the employment and fees of counsel (subject to the reasonable approval of such Underwriter or such Selected Dealer, as the case may be) and payment of actual expenses. Such Underwriter, such Selected Dealer or Controlling Person shall have the right to employ its or their own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of such Underwriter, such Selected Dealer or Controlling Person unless (i) the employment of such counsel at the expense of the Company shall have been authorized in writing by the Company in connection with the defense of such action, or (ii) the Company shall not have employed counsel to have charge of the defense of such action, or (iii) such indemnified party or parties shall have reasonably concluded that there may be defenses available to it or them which are different from or additional to those available to the Company (in which case the Company shall not have the right to direct the defense of such action on behalf of the indemnified party or parties), in any of which events the reasonable fees and expenses of not more than one additional firm of attorneys selected by such Underwriter (in addition to local counsel), Selected Dealer and/or Controlling Person shall be borne by the Company. Notwithstanding anything to the contrary contained herein, if any Underwriter, Selected Dealer or Controlling Person shall assume the defense of such action as provided above, the Company shall have the right to approve the terms of any settlement of such action which approval shall not be unreasonably withheld.

6.3 Indemnification of the Company. Each Underwriter severally and not jointly agrees to indemnify and hold harmless the Company, its directors, officers and employees and agents who control the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all loss, liability, claim, damage and expense described in the foregoing indemnity from the Company to such Underwriter, as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions made in any Preliminary Prospectus, if any, the Registration Statement or Prospectus or any amendment or supplement thereto or in any application, in reliance upon, and in strict conformity with, written information furnished to the Company with respect to such Underwriter by or on behalf of such Underwriter expressly for use in such Preliminary Prospectus, if any, the Registration Statement or Prospectus or any amendment or supplement thereto or in any such application. In case any action shall be brought against the Company or any other Person so indemnified based on any Preliminary Prospectus, if any, the Registration Statement or Prospectus or any amendment or supplement thereto or any application, and in respect of which indemnity may be sought against such Underwriter, such Underwriter shall have the rights and duties given to the Company, and the Company and each other Person so indemnified shall have the rights and duties given to such Underwriter by the provisions of this Article VI. Notwithstanding the provisions of this Section 6.3, no Underwriter shall be required to indemnify the Company for any amount in excess of the underwriting discounts and commissions applicable to the Securities purchased by such Underwriter. The Underwriters' obligations in this Section 6.3 to indemnify the Company are several in proportion to their respective underwriting obligations and not joint.

6.4 Contribution.

(a) Contribution Rights. In order to provide for just and equitable contribution under the Securities Act in any case in which (i) any Person entitled to indemnification under this Article VI makes a claim for indemnification pursuant hereto but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case notwithstanding the fact that this Article VI provides for indemnification in such case, or (ii) contribution under the Securities Act, the Exchange Act or otherwise may be required on the part of any such Person in circumstances for which indemnification is provided under this Article VI, then, and in each such case, the Company and each Underwriter, severally and not jointly, shall contribute to the aggregate losses, liabilities, claims, damages and expenses of the nature contemplated by said indemnity agreement incurred by the Company and such Underwriter, as incurred, in such proportions that such Underwriter is responsible for that portion represented by the percentage that the underwriting discount appearing on the cover page of the Prospectus bears to the initial offering price appearing thereon and the Company is responsible for the balance; provided, that, no Person guilty of a fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation. For purposes of this Section, each director, officer and employee of such Underwriter or the Company, as applicable, and each Person, if any, who controls such Underwriter or the Company, as applicable, within the meaning of Section 15 of the Securities Act shall have the same rights to contribution as such Underwriter or the Company, as applicable. Notwithstanding the provisions of this Section 6.4, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions applicable to the Securities purchased by such Underwriter. The Underwriters' obligations in this Section 6.4 to contribute are several in proportion to their respective underwriting obligations and not joint.

(b) Contribution Procedure. Within fifteen days after receipt by any party to this Agreement (or its representative) of notice of the commencement of any action, suit or proceeding, such party will, if a claim for contribution in respect thereof is to be made against another party ("contributing party"), notify the contributing party of the commencement thereof, but the failure to so notify the contributing party will not relieve it from any liability which it may have to any other party other than for contribution hereunder. In case any such action, suit or proceeding is brought against any party, and such party notifies a contributing party or its representative of the commencement thereof within the aforesaid fifteen days, the contributing party will be entitled to participate therein with the notifying party and any other contributing party similarly notified. Any such contributing party shall not be liable to any party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution without the written consent of such contributing party. The contribution provisions contained in this Section 6.4 are intended to supersede, to the extent permitted by law, any right to contribution under the Securities Act, the Exchange Act or otherwise available.

**ARTICLE VII.
MISCELLANEOUS**

7.1 Termination.

(a) Termination Right. The Representative shall have the right to terminate this Agreement at any time prior to any Closing Date, (i) if any domestic or international event or act or occurrence has materially disrupted, or in its opinion will in the immediate future materially disrupt, general securities markets in the United States; or (ii) if trading on any Trading Market shall have been suspended or materially limited, or minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required by FINRA or by order of the Commission or any other government authority having jurisdiction, or (iii) if the United States shall have become involved in a new war or an increase in major hostilities, or (iv) if a banking moratorium has been declared by a New York State or federal authority, or (v) if a moratorium on foreign exchange trading has been declared which materially adversely impacts the United States securities markets, or (vi) if the Company shall have sustained a material loss by fire, flood, accident, hurricane, earthquake, theft, sabotage or other calamity or malicious act which, whether or not such loss shall have been insured, will, in the Representative's opinion, make it inadvisable to proceed with the delivery of the Securities, or (vii) if the Company is in material breach of any of its representations, warranties or covenants hereunder, or (viii) if the Representative shall have become aware after the date hereof of such a material adverse change in the conditions or prospects of the Company, or such adverse material change in general market conditions as in the Representative's judgment would make it impracticable to proceed with the offering, sale and/or delivery of the Securities or to enforce contracts made by the Underwriters for the sale of the Securities.

(b) Expenses. In the event this Agreement shall be terminated pursuant to Section 7.1(a), within the time specified herein or any extensions thereof pursuant to the terms herein, the Company shall be obligated to pay to the Representative its actual and accountable out of pocket expenses related to the transactions contemplated herein then due and payable, including the fees and disbursements of EGS up to \$35,000 (provided, however, that such expense cap in no way limits or impairs the indemnification and contribution provisions of this Agreement).

(c) Indemnification. Notwithstanding any contrary provision contained in this Agreement, any election hereunder or any termination of this Agreement, and whether or not this Agreement is otherwise carried out, the provisions of Article VI shall not be in any way effected by such election or termination or failure to carry out the terms of this Agreement or any part hereof.

7.2 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, the Prospectus and the Prospectus Supplement, contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules. Notwithstanding anything herein to the contrary, the Investment Banking Agreement, dated May 8, 2025 (the "Investment Banking Agreement"), by and between the Company and the Representative, shall continue to be effective and the terms therein, including, without limitation, Section 4(e) and Section 4(f) with respect to any future offerings, shall continue to survive and be enforceable by the Representative in accordance with its terms, provided that, in the event of a conflict between the terms of the Engagement Agreement and this Agreement, the terms of this Agreement shall prevail.

7.3 Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of: (a) the time of transmission, if such notice or communication is delivered via e-mail attachment at the email address set forth on the signature pages attached hereto at or prior to 5:30 p.m. (New York City time) on a Trading Day, (b) the next Trading Day after the time of transmission, if such notice or communication is delivered via e-mail attachment at the e-mail address as set forth on the signature pages attached hereto on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (c) the second (2nd) Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as set forth on the signature pages attached hereto.

7.4 Amendments; Waivers. No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and the Representative. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right.

7.5 Headings. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof.

7.6 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns.

7.7 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Action or Proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such Action or Proceeding is improper or is an inconvenient venue for such Proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such Action or Proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an Action or Proceeding to enforce any provisions of the Transaction Documents, then, in addition to the obligations of the Company under Article VI, the prevailing party in such Action or Proceeding shall be reimbursed by the other party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such Action or Proceeding.

7.8 Survival. The representations and warranties contained herein shall survive the Closing and the Option Closing, if any, and the delivery of the Securities.

7.9 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to each other party, it being understood that the parties need not sign the same counterpart. In the event that any signature is delivered by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such ".pdf" signature page were an original thereof.

7.10 Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

7.11 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, the Underwriters and the Company will be entitled to specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations contained in the Transaction Documents and hereby agree to waive and not to assert in any Action for specific performance of any such obligation the defense that a remedy at law would be adequate.

7.12 Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

7.13 Construction. The parties agree that each of them and/or their respective counsel have reviewed and had an opportunity to revise the Transaction Documents and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of the Transaction Documents or any amendments thereto. In addition, each and every reference to share prices and shares of Common Stock in any Transaction Document shall be subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.

7.14 **WAIVER OF JURY TRIAL.** IN ANY ACTION, SUIT, OR PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY, IRREVOCABLY AND EXPRESSLY WAIVE FOREVER ANY RIGHT TO TRIAL BY JURY.

(Signature Pages Follow)

If the foregoing correctly sets forth the understanding between the Underwriters and the Company, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement among the Company and the several Underwriters in accordance with its terms.

Very truly yours,

CELLECTAR BIOSCIENCES, INC.

By: _____
Name: Chad Kolean
Title: Chief Financial Officer

Address for Notice:
100 Campus Drive
Florham Park, New Jersey 07932
E-mail: ckolean@cellectar.com

Copy to:

Sidley Austin LLP
787 Seventh Avenue
New York, NY 10019
Attention: []
E-mail: []

Accepted on the date first above written.
LADENBURG THALMANN & CO. INC.
As the Representative of the several
Underwriters listed on Schedule I
By: Ladenburg Thalmann & Co. Inc.

By: _____
Name:
Title:

Address for Notice:

640 Fifth Avenue, 4th Floor
New York, New York 10019
Attn: General Counsel

SCHEDULE I

SCHEDULE OF UNDERWRITERS

Underwriters	Closing Shares	Pre-Funded Warrants	Closing Warrants	Closing Purchase Price
Ladenburg Thalmann & Co. Inc.				
Total				

SCHEDULE II

PARTIES SUBJECT TO LOCK-UP AGREEMENTS

- James Caruso
- Jarrod Longcor
- Chad Kolean
- Asher Chanan-Khan
- Frederick Driscoll
- Stefan Loren
- John Neis
- Douglas Swirsky

EXHIBIT A

Form of Lock-Up Agreement

[____], 2025

Ladenburg Thalmann & Co. Inc.,
acting as representative to the several underwriters:

Re: Underwriting Agreement, dated [____], 2025, (the “Underwriting Agreement”) entered by and between Collectar Biosciences, Inc. (the “Company”), and
Ladenburg Thalmann & Co. Inc. (the “Representative”), acting as representative to the several underwriters (the “Underwriters”)

Ladies and Gentlemen:

The undersigned irrevocably agrees with the Company that, from the date hereof until sixty (60) days following the Closing Date (as defined in the Underwriting Agreement) (such period, the “Restriction Period”), the undersigned will not offer, sell, contract to sell, hypothecate, pledge or otherwise dispose of (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the undersigned or any Affiliate (as defined in the Underwriting Agreement) of the undersigned or any person in privity with the undersigned or any Affiliate of the undersigned), directly or indirectly, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), with respect to, any shares of common stock of the Company or securities convertible, exchangeable or exercisable into, shares of common stock of the Company beneficially owned, held or hereafter acquired by the undersigned (the “Securities”). Beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act. In order to enforce this covenant, the Company shall impose irrevocable stop-transfer instructions preventing the transfer agent of the Company from effecting any actions in violation of this letter agreement. The Representative may consent to an early release from the Restriction Period if, in its sole and absolute discretion, the market for the Securities would not be adversely impacted by sales and in cases of financial emergency. The restrictions contained in this letter agreement shall not apply (1) to the Securities to be sold pursuant to the Underwriting Agreement on behalf of the undersigned, if any or (2) if the Company or the Representative determine to abandon the offering after the Underwriting Agreement is entered into.

In addition, notwithstanding the foregoing, and subject to the conditions below, the undersigned may:

(1) establish a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of shares of common stock during the Restriction Period and (ii) no public report or filing is required or voluntarily made in connection therewith; and

(2) exercise an option to purchase shares of common stock granted under any employee benefit plan, or non-employee director share plan, of the Company, provided, however, that (x) the underlying shares of common stock received by the undersigned shall continue to be subject to the restrictions on transfer set forth in this letter agreement and (y) (i) any filing under Section 16 of the Exchange Act required to be made during the Restriction Period shall clearly indicate in the footnotes thereto that (A) the filing relates to the circumstances described above and (B) no Securities were sold by the undersigned and (ii) the undersigned does not otherwise voluntarily effect any other public filing or report regarding such transfers during the Restriction Period.

The undersigned acknowledges that the execution, delivery and performance of this letter agreement is a material inducement to each Underwriter to perform under the Underwriting Agreement and that each Underwriter (which shall be a third party beneficiary of this letter agreement) and the Company shall be entitled to specific performance of the undersigned’s obligations hereunder. The undersigned hereby represents that the undersigned has the power and authority to execute, deliver and perform this letter agreement, that the undersigned has received adequate consideration therefor and that the undersigned will indirectly benefit from the closing of the transactions contemplated by the Underwriting Agreement.

This letter agreement may not be amended or otherwise modified in any respect without the written consent of each of the Company, the Representative and the undersigned. This letter agreement shall be construed and enforced in accordance with the laws of the State of New York without regard to the principles of conflict of laws. The undersigned hereby irrevocably submits to the exclusive jurisdiction of the United States District Court sitting in the Southern District of New York and the courts of the State of New York located in Manhattan, for the purposes of any suit, action or proceeding arising out of or relating to this letter agreement, and hereby waives, and agrees not to assert in any such suit, action or proceeding, any claim that (i) it is not personally subject to the jurisdiction of such court, (ii) the suit, action or proceeding is brought in an inconvenient forum, or (iii) the venue of the suit, action or proceeding is improper. The undersigned hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by receiving a copy thereof sent to the Company at the address in effect for notices to it under the Underwriting Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. The undersigned hereby waives any right to a trial by jury. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. The undersigned agrees and understands that this letter agreement does not intend to create any relationship between the undersigned and each Underwriter and that no issuance or sale of the Securities is created or intended by virtue of this letter agreement.

This letter agreement shall be binding on successors and assigns of the undersigned with respect to the Securities and any such successor or assign shall enter into a similar agreement for the benefit of the Underwriters. This letter agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provisions hereof be enforced by, any of other Person (as defined in the Underwriting Agreement).

*** SIGNATURE PAGE FOLLOWS***

This letter agreement may be executed in two or more counterparts, all of which when taken together may be considered one and the same agreement.

Signature

Print Name

Position in Company, if any

Address for Notice:

By signing below, the Company agrees to enforce the restrictions on transfer set forth in this letter agreement.

CELLECTAR BIOSCIENCES, INC.

By: _____
Name:
Title:

EXHIBIT B

Form of Common Warrant

EXHIBIT C

Form of Pre-Funded Warrant

EXHIBIT D

Form of Warrant Agency Agreement

EXHIBITE

Officers' Certificate

EXHIBIT F

Secretary's Certificate

Collectar Biosciences, Inc.

and

Equiniti Trust Company, LLC, as
Warrant Agent

Warrant Agency Agreement

Dated as of [____], 2025

WARRANT AGENCY AGREEMENT

WARRANT AGENCY AGREEMENT, dated as of [____], 2025 (“Agreement”), between Collectar Biosciences, Inc., a Delaware corporation (the “Company”), and Equiniti Trust Company, LLC, a New York limited liability trust company (the “Warrant Agent”).

W I T N E S S E T H

WHEREAS, pursuant to a registered offering by the Company of shares of common stock, par value \$0.00001 per share (the “Common Stock”), common stock purchase warrants to purchase shares of Common Stock (the “Common Warrants”), and pre-funded common stock purchase warrants (the “Pre-Funded Warrants”, together with the Common Warrants, the “Warrants”), pursuant to an effective registration statement on Form S-1 (File No. 333-[____]) (the “Registration Statement”), the Company wishes to issue the Warrants in book entry form entitling the respective holders of the Warrants (the “Holders”, which term shall include a Holder’s transferees, successors and assigns and “Holder” shall include, if the Warrants are held in “street name,” a Participant (as defined below) or a designee appointed by such Participant) to purchase an aggregate of up to [____] shares of Common Stock upon the terms and subject to the conditions hereinafter set forth (the “Offering”);

WHEREAS, the shares of Common Stock, the Pre-Funded Warrants, and the Common Warrants to be issued in connection with the Offering shall be immediately separable and will be issued separately, but will be purchased together in the Offering; and

WHEREAS, the Company wishes the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing so to act, in connection with the issuance, registration, transfer, exchange, exercise and replacement of the Warrants and, in the Warrant Agent’s capacity as the Company’s transfer agent, the delivery of the Warrant Shares (as defined below).

NOW, THEREFORE, in consideration of the premises and the mutual agreements herein set forth, the parties hereby agree as follows:

Section 1. Certain Definitions. For purposes of this Agreement, the following terms have the meanings indicated:

(a) “Business Day” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to “stay at home”, “shelter-in-place”, “non-essential employee” or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York generally are open for use by customers on such day.

(b) “Close of Business” on any given date means 5:00 p.m., New York City time, on such date; provided, however, that if such date is not a Business Day it means 5:00 p.m., New York City time, on the next succeeding Business Day.

(c) “Person” means an individual, corporation, association, partnership, limited liability company, joint venture, trust, unincorporated organization, government or political subdivision thereof or governmental agency or other entity.

(d) “Warrant Certificate” means a certificate in substantially the form attached as Exhibit 1-A (as it relates to the Common Warrants) and Exhibit 1-B (as it relates to the Pre-Funded Warrants) hereto, representing such number of Warrant Shares (as defined below) as is indicated therein, provided that any reference to the delivery of a Warrant Certificate in this Agreement shall include delivery of notice from the Depository or a Participant (each as defined below) of the transfer or exercise of the applicable Warrant in the form of a Global Warrant (as defined below).

(e) “Warrant Shares” means the shares of Common Stock underlying the Warrants and issuable upon exercise of the Warrants.

All other capitalized terms used but not otherwise defined herein shall have the meaning ascribed to such terms in the Warrant Certificate.

Section 2. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company in accordance with the terms and conditions hereof, and the Warrant Agent hereby accepts such appointment. The Company may from time to time appoint a Co-Warrant Agent as it may, in its sole discretion, deem necessary or desirable. The Warrant Agent shall have no duty to supervise, and will in no event be liable for the acts or omissions of, any co-Warrant Agent.

Section 3. Global Warrants.

(a) The Warrants shall be issuable in book entry form (the “Global Warrants”). All of the Warrants shall initially be represented by one or more Global Warrants deposited with the Warrant Agent and registered in the name of Cede & Co., a nominee of The Depository Trust Company (the “Depository”), or as otherwise directed by the Depository. Ownership of beneficial interests in the Warrants shall be shown on, and the transfer of such ownership shall be effected through, records maintained by (i) the Depository or its nominee for each Global Warrant or (ii) institutions that have accounts with the Depository (such institution, with respect to a Warrant in its account, a “Participant”).

(b) If the Depository subsequently ceases to make its book-entry settlement system available for the Warrants, the Company may instruct the Warrant Agent regarding other arrangements for book-entry settlement. In the event that the Warrants are not eligible for, or it is no longer necessary to have the Warrants available in, book-entry form, the Warrant Agent shall provide written instructions to the Depository to deliver to the Warrant Agent for cancellation each Global Warrant, and the Company shall instruct the Warrant Agent to deliver to each Holder a Warrant Certificate.

(c) A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to the Warrant Agent for the exchange of some or all of such Holder’s Global Warrants for a Warrant Certificate evidencing the same number of Warrants, which request shall be in the form attached hereto as Annex A (a “Warrant Certificate Request Notice”) and the date of delivery of such Warrant Certificate Request Notice by the Holder, the “Warrant Certificate Request Notice Date” and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants evidenced by a Warrant Certificate, a “Warrant Exchange”), the Warrant Agent shall promptly effect the Warrant Exchange and shall promptly issue and deliver, at the expense of the Company, to the Holder a Warrant Certificate for such number of Warrants in the name set forth in the Warrant Certificate Request Notice. Such Warrant Certificate shall be dated the original issue date of the Warrants, shall be executed by manual signature by an authorized signatory of the Company, shall be in the form attached hereto as Exhibit 1-A and Exhibit 1-B, and shall be reasonably acceptable in all respects to such Holder. In connection with a Warrant Exchange, the Company agrees to deliver, or to direct the Warrant Agent to deliver, the Warrant Certificate to the Holder within two (2) Business Days of the Warrant Certificate Request Notice pursuant to the delivery instructions in the Warrant Certificate Request Notice (“Warrant Certificate Delivery Date”). If the Company fails for any reason to deliver to the Holder the Warrant Certificate subject to the Warrant Certificate Request Notice by the Warrant Certificate Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares evidenced by such Warrant Certificate (based on the VWAP (as defined in the Warrant Certificate) of the Common Stock on the Warrant Certificate Request Notice Date), \$10 per Business Day for each Business Day after such Warrant Certificate Delivery Date until such Warrant Certificate is delivered or, prior to delivery of such Warrant Certificate, the Holder rescinds such Warrant Exchange. The Company covenants and agrees that, upon the date of delivery of the Warrant Certificate Request Notice, the Holder shall be deemed to be the holder of the Warrant Certificate and, notwithstanding anything to the contrary set forth herein, the Warrant Certificate shall be deemed for all purposes to contain all of the terms and conditions of the Warrants evidenced by such Warrant Certificate and the terms of this Agreement, other than Sections 3(c) and 9 herein, shall not apply to the Warrants evidenced by the Warrant Certificate. In the event a beneficial owner requests a Warrant Exchange, upon issuance of the paper Warrant Certificate, the Company shall act as warrant agent and the terms of the paper Warrant Certificate so issued shall exclusively govern in respect thereof. For purposes of clarity, the Company and the Warrant Agent acknowledge and agree that, with respect to the terms of the Warrants, the Warrant Certificate or Global Warrant shall set forth the terms of the Warrants and, in the event of any conflict between the Warrant Certificate or the Global Warrant and this Agreement, the Warrant Certificate or the Global Warrants, as the case may be, shall control. For purposes of Regulation SHO, a holder whose interest in this Warrant is a beneficial interest in certificate(s) representing this Warrant held in book-entry form through DTC shall be deemed to have exercised its interest in this Warrant upon instructing its broker that is a DTC participant to exercise its interest in this Warrant, except that, if the date of exercise is a date when the stock transfer books of the Company are closed, such person shall be deemed to have become the holder of such shares at the open of business on the next succeeding date on which the stock transfer books are open.

Section 4. Form of Warrant. The Warrants, together with the form of election to purchase Common Stock (the “Exercise Notice”) and the form of assignment to be printed on the reverse thereof, whether a Warrant Certificate or a Global Warrant, shall be in the form of Exhibit 1-A and Exhibit 1-B, as applicable, hereto.

Section 5. Countersignature and Registration. The Warrant Certificates shall be executed on behalf of the Company by its Chief Executive Officer, Chief Financial Officer or Vice President, either manually or by facsimile signature, and have affixed thereto the Company's seal or a facsimile thereof which shall be attested by the Secretary or an Assistant Secretary of the Company, either manual or facsimile signature. The Warrant Certificates shall be countersigned by the Warrant Agent by either manual or by facsimile signature and shall not be valid for any purpose unless so countersigned. In case any officer of the Company who shall have signed any of the Warrant Certificates shall cease to be such officer of the Company before countersignature by the Warrant Agent and issuance and delivery by the Company, such Warrant Certificates, nevertheless, may be countersigned by the Warrant Agent, issued and delivered with the same force and effect as though the person who signed such Warrant Certificate had not ceased to be such officer of the Company; and any Warrant Certificate may be signed on behalf of the Company by any person who, at the actual date of the execution of such Warrant Certificate, shall be a proper officer of the Company to sign such Warrant Certificate, although at the date of the execution of this Agreement any such person was not such an officer.

The Warrant Agent will keep or cause to be kept, at its office designated for such purpose, books for registration and transfer of the Warrant Certificates issued hereunder. Such books shall show the names and addresses of the respective Holders of the Warrant Certificates, the number of warrants evidenced on the face of each of such Warrant Certificate and the date of each of such Warrant Certificate. The Warrant Agent will create a special account for the issuance of Warrant Certificates.

Section 6. Transfer, Split Up, Combination and Exchange of Warrant Certificates; Mutilated, Destroyed, Lost or Stolen Warrant Certificates. Subject to the provisions of the Warrant Certificate and the last sentence of this first paragraph of Section 6 and subject to applicable law, rules or regulations, or any "stop transfer" instructions the Company may give to the Warrant Agent, at any time after the closing date of the Offering, and at or prior to the Close of Business on the Termination Date (as such term is defined in the Warrant Certificate), any Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants may be transferred, split up, combined or exchanged for another Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants, entitling the Holder to purchase a like number of shares of Common Stock as the Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants surrendered then entitled such Holder to purchase. Any Holder desiring to transfer, split up, combine or exchange any Warrant Certificate or Global Warrant shall make such request in writing delivered to the Warrant Agent, and shall surrender the Warrant Certificate or Warrant Certificates to be transferred, split up, combined or exchanged at the office of the Warrant Agent designated for such purpose, provided that no such surrender is applicable to the Holder of a Global Warrant. Any requested transfer of Warrants, whether in book-entry form or certificate form, shall be accompanied by evidence of authority of the party making such request that may be reasonably required by the Warrant Agent. Thereupon the Warrant Agent shall, subject to the last sentence of this first paragraph of Section 6, countersign and deliver to the Person entitled thereto a Warrant Certificate or Warrant Certificates, as the case may be, as so requested. The Company may require payment from the Holder of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with any transfer, split up, combination or exchange of Warrant Certificates. The Company shall compensate the Warrant Agent per the fee schedule mutually agreed upon by the parties hereto and provided separately on the date hereof.

Upon receipt by the Warrant Agent of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of a Warrant Certificate, which evidence shall include an affidavit of loss, or in the case of mutilated certificates, the certificate or portion thereof remaining, and, in case of loss, theft or destruction, of indemnity in customary form and amount, and satisfaction of any other reasonable requirements established by Section 8-405 of the Uniform Commercial Code as in effect in the State of Delaware, and reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto, and upon surrender to the Warrant Agent and cancellation of the Warrant Certificate if mutilated, the Company will make and deliver a new Warrant Certificate of like tenor to the Warrant Agent for delivery to the Holder in lieu of the Warrant Certificate so lost, stolen, destroyed or mutilated.

Section 7. Exercise of Warrants; Exercise Price; Termination Date.

(a) The Warrants shall be exercisable commencing on the Initial Exercise Date. The Warrants shall cease to be exercisable on the Termination Date (as such term is defined in the Warrant Certificate). Subject to the foregoing and to Section 7(b) below, the Holder of a Warrant may exercise the Warrant in whole or in part upon surrender of the Warrant Certificate, if required, with the executed Exercise Notice and payment of the Exercise Price (unless exercised via a cashless exercise) pursuant to Section 2(a) of the Warrant Certificate, to the Warrant Agent at the office of the Warrant Agent designated for such purpose. In the case of the Holder of a Global Warrant, the Holder shall deliver the executed Exercise Notice and the payment of the Exercise Price pursuant to Section 2(a) of the Warrant Certificate. Notwithstanding any other provision in this Agreement, a holder whose interest in a Global Warrant is a beneficial interest in a Global Warrant held in book-entry form through the Depository (or another established clearing corporation performing similar functions), shall effect exercises by delivering to the Depository (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by the Depository (or such other clearing corporation, as applicable). The Company acknowledges that the bank accounts maintained by the Warrant Agent in connection with the services provided under this Agreement will be in its name and that the Warrant Agent may receive investment earnings in connection with the investment at Warrant Agent risk and for its benefit of funds held in those accounts from time to time. Neither the Company nor the Holders will receive interest on any deposits or Exercise Price. No ink-original Exercise Notice shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Exercise Notice be required.

(b) Upon receipt of an Exercise Notice for a cashless exercise pursuant to Section 2(c) of the Warrant (each, a “Cashless Exercise”), the Warrant Agent shall deliver a copy of the Exercise Notice to the Company and the Company shall promptly calculate and transmit to the Warrant Agent in writing the number of Warrant Shares issuable in connection with such Cashless Exercise. The Warrant Agent shall issue such number of Warrant Shares in connection with such Cashless Exercise.

(c) Upon the Warrant Agent’s receipt of a Warrant Certificate at or prior to the Close of Business on the Termination Date set forth in such Warrant Certificate, with the executed Exercise Notice and payment of the Exercise Price pursuant to Section 2(a) of the Warrant Certificate, the shares to be purchased (other than in the case of a Cashless Exercise) and an amount equal to any applicable tax, governmental charge referred to in Section 6 by wire transfer, or by certified check or bank draft payable to the order of the Company (or, in the case of the Holder of a Global Warrant, the delivery of the executed Exercise Notice and the payment of the Exercise Price pursuant to Section 2(a) of the Warrant Certificate (other than in the case of a Cashless Exercise) and any other applicable amounts as set forth herein), the Warrant Agent shall cause the Warrant Shares underlying such Warrant Certificate or Global Warrant to be delivered to or upon the order of the Holder of such Warrant Certificate or Global Warrant, registered in such name or names as may be designated by such Holder, no later than the Warrant Share Delivery Date (as such term is defined in the Warrant Certificate). If the Company is then a participant in the DWAC system of the Depository and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) the Warrant is being exercised via Cashless Exercise, then the certificates for Warrant Shares shall be transmitted by the Warrant Agent to the Holder by crediting the account of the Holder’s broker with the Depository through its DWAC system. For the avoidance of doubt, if the Company becomes obligated to pay any amounts to any Holders pursuant to Section 2(d)(i) or 2(d)(iv) of the Warrant Certificate, such obligation shall be solely that of the Company and not that of the Warrant Agent. Notwithstanding anything else to the contrary in this Agreement, except in the case of a Cashless Exercise, if any Holder fails to duly deliver payment to the Warrant Agent of an amount equal to the aggregate Exercise Price of the Warrant Shares to be purchased upon exercise of such Holder’s Warrant as set forth in Section 7(a) hereof, the Warrant Agent will not be obligated to deliver such Warrant Shares (via DWAC or otherwise) until following receipt of such payment, and the applicable Warrant Share Delivery Date shall be deemed extended by one day for each day (or part thereof) until such payment is delivered to the Warrant Agent.

(d) The Warrant Agent shall deposit all funds received by it in payment of the Exercise Price for all Warrants in the account of the Company maintained with the Warrant Agent for such purpose (or to such other account as directed by the Company in writing) and shall advise the Company via email at the end of each day on which Exercise Notices are received or funds for the exercise of any Warrant are received of the amount so deposited to its account.

(e) In case the Holder of any Warrant Certificate shall exercise fewer than all Warrants evidenced thereby, upon the request of the Holder, a new Warrant Certificate evidencing the number of Warrants equivalent to the number of Warrants remaining unexercised may be issued by the Warrant Agent to the Holder of such Warrant Certificate or to his duly authorized assigns in accordance with Section 2(d)(ii) of the Warrant Certificate, subject to the provisions of Section 6 hereof.

Section 8. Cancellation and Destruction of Warrant Certificates. All Warrant Certificates surrendered for the purpose of exercise, transfer, split up, combination or exchange shall, if surrendered to the Company or to any of its agents, be delivered to the Warrant Agent for cancellation or in canceled form, or, if surrendered to the Warrant Agent, shall be canceled by it, and no Warrant Certificates shall be issued in lieu thereof except as expressly permitted by any of the provisions of this Agreement. The Company shall deliver to the Warrant Agent for cancellation and retirement, and the Warrant Agent shall so cancel and retire, any other Warrant Certificate purchased or acquired by the Company otherwise than upon the exercise thereof. The Warrant Agent shall deliver all canceled Warrant Certificates to the Company, or shall, at the written request of the Company, destroy such canceled Warrant Certificates, and in such case shall deliver a certificate of destruction thereof to the Company, subject to any applicable law, rule or regulation requiring the Warrant Agent to retain such canceled certificates.

Section 9. Certain Representations; Reservation and Availability of Shares of Common Stock or Cash.

(a) This Agreement has been duly authorized, executed and delivered by the Company and, assuming due authorization, execution and delivery hereof by the Warrant Agent, constitutes a valid and legally binding obligation of the Company enforceable against the Company in accordance with its terms, and the Warrants have been duly authorized, executed and issued by the Company and, assuming due execution thereof by the Warrant Agent pursuant hereto and payment therefor by the Holders as provided in the Registration Statement, constitute valid and legally binding obligations of the Company enforceable against the Company in accordance with their terms and entitled to the benefits hereof; in each case except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium and other similar laws relating to or affecting creditors' rights generally or by general equitable principles (regardless of whether such enforceability is considered in a proceeding in equity or at law).

(b) As of the date hereof, the authorized capital stock of the Company consists of (i) 170,000,000 shares of Common Stock, of which [] shares of Common Stock are issued and outstanding, and [] shares of Common Stock are reserved for issuance upon exercise of the Warrants, and (ii) 7,000 shares of preferred stock, of which [] shares are issued and outstanding. Except as disclosed in the Registration Statement, there are no other outstanding obligations, warrants, options or other rights to subscribe for or purchase from the Company any class of capital stock of the Company.

(c) The Company covenants and agrees that it will cause to be reserved and kept available out of its authorized and unissued shares of Common Stock or its authorized and issued shares of Common Stock held in its treasury, free from preemptive rights, the number of shares of Common Stock that will be sufficient to permit the exercise in full of all outstanding Warrants.

(d) The Warrant Agent will create a special account for the issuance of Common Stock upon the exercise of Warrants.

(e) The Company further covenants and agrees that it will pay when due and payable any and all federal and state transfer taxes and charges which may be payable in respect of the original issuance or delivery of the Warrant Certificates or certificates evidencing Common Stock upon exercise of the Warrants. The Company shall not, however, be required to pay any tax or governmental charge which may be payable in respect of any transfer involved in the transfer or delivery of Warrant Certificates or the issuance or delivery of certificates for Common Stock in a name other than that of the Holder of the Warrant Certificate evidencing Warrants surrendered for exercise or to issue or deliver any certificate for shares of Common Stock upon the exercise of any Warrants until any such tax or governmental charge shall have been paid (any such tax or governmental charge being payable by the Holder of such Warrant Certificate at the time of surrender) or until it has been established to the Company's reasonable satisfaction that no such tax or governmental charge is due.

Section 10. Common Stock Record Date. Each Holder shall be deemed to have become the holder of record for the Warrant Shares pursuant to Section 2(d)(i) of the Warrant Certificate.

Section 11. Adjustment of Exercise Price, Number of Shares of Common Stock or Number of the Company Warrants. The Exercise Price, the number of shares covered by each Warrant and the number of Warrants outstanding are subject to adjustment from time to time as provided in Section 3 of the Warrant Certificate. In the event that at any time, as a result of an adjustment made pursuant to Section 3 of the Warrant Certificate, the Holder of any Warrant thereafter exercised shall become entitled to receive any shares of capital stock of the Company other than shares of Common Stock, thereafter the number of such other shares so receivable upon exercise of any Warrant shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the shares contained in Section 3 of the Warrant Certificate, and the provisions of Sections 7, 9 and 13 of this Agreement with respect to the shares of Common Stock shall apply on like terms to any such other shares. All Warrants originally issued by the Company subsequent to any adjustment made to the Exercise Price pursuant to the Warrant Certificate shall evidence the right to purchase, at the adjusted Exercise Price, the number of shares of Common Stock purchasable from time to time hereunder upon exercise of the Warrants, all subject to further adjustment as provided herein.

Section 12. Certification of Adjusted Exercise Price or Number of Shares of Common Stock. Whenever the Exercise Price or the number of shares of Common Stock issuable upon the exercise of each Warrant is adjusted as provided in Section 11 or 13, the Company shall (a) promptly prepare a certificate setting forth the Exercise Price of each Warrant as so adjusted, and a brief statement of the facts accounting for such adjustment, (b) promptly file with the Warrant Agent and with each transfer agent for the Common Stock a copy of such certificate and (c) instruct the Warrant Agent to send a brief summary thereof to each Holder of a Warrant Certificate.

Section 13. Fractional Shares of Common Stock.

(a) The Company shall not issue fractions of Warrants or distribute Warrant Certificates which evidence fractional Warrants. Whenever any fractional Warrant would otherwise be required to be issued or distributed, the actual issuance or distribution shall reflect a rounding of such fraction either up or down to the nearest whole Warrant.

(b) The Company shall not issue fractions of shares of Common Stock upon exercise of Warrants or distribute stock certificates which evidence fractional shares of Common Stock. Whenever any fraction of a share of Common Stock would otherwise be required to be issued or distributed, the actual issuance or distribution in respect thereof shall be made in accordance with Section 2(d)(v) of the Warrant Certificate.

Section 14. Conditions of the Warrant Agent's Obligations. The Warrant Agent accepts its obligations herein set forth upon the terms and conditions hereof, including the following to all of which the Company agrees and to all of which the rights hereunder of the Holders from time to time of the Warrant Certificates shall be subject:

- (a) Compensation and Indemnification. The Company agrees promptly to pay the Warrant Agent the compensation detailed on Exhibit 2 hereto for all services rendered by the Warrant Agent and to reimburse the Warrant Agent for reasonable out-of-pocket expenses (including reasonable counsel fees) incurred by the Warrant Agent in connection with the services rendered hereunder by the Warrant Agent. The Company also agrees to indemnify the Warrant Agent for, and to hold it harmless against, any loss, liability or expense incurred without gross negligence, bad faith or willful misconduct on the part of the Warrant Agent (as determined by a court of competent jurisdiction in a final and non-appealable judgment), arising out of or in connection with its acting as Warrant Agent hereunder, including the reasonable costs and expenses of defending against any claim of such liability.
- (b) Agent for the Company. In acting under this Warrant Agreement and in connection with the Warrant Certificates, the Warrant Agent is acting solely as agent of the Company and does not assume any obligations or relationship of agency or trust for or with any of the Holders of Warrant Certificates or beneficial owners of Warrants.
- (c) Counsel. The Warrant Agent may consult with counsel satisfactory to it, which may include counsel for the Company, and the written advice of such counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in accordance with the advice of such counsel.
- (d) Documents. The Warrant Agent shall be protected and shall incur no liability for or in respect of any action taken or omitted by it in reliance upon any Warrant Certificate, notice, direction, consent, certificate, affidavit, statement or other paper or document reasonably believed by it to be genuine and to have been presented or signed by the proper parties.
- (e) Certain Transactions. The Warrant Agent, and its officers, directors and employees, may become the owner of, or acquire any interest in, Warrants, with the same rights that it or they would have if it were not the Warrant Agent hereunder, and, to the extent permitted by applicable law, it or they may engage or be interested in any financial or other transaction with the Company and may act on, or as depository, trustee or agent for, any committee or body of Holders of Warrant Securities or other obligations of the Company as freely as if it were not the Warrant Agent hereunder. Nothing in this Warrant Agreement shall be deemed to prevent the Warrant Agent from acting as trustee under any indenture to which the Company is a party.
- (f) No Liability for Interest. Unless otherwise agreed with the Company, the Warrant Agent shall have no liability for interest on any monies at any time received by it pursuant to any of the provisions of this Agreement or of the Warrant Certificates.
- (g) No Liability for Invalidity. The Warrant Agent shall have no liability with respect to any invalidity of this Agreement or any of the Warrant Certificates (except as to the Warrant Agent's countersignature thereon).
- (h) No Responsibility for Representations. The Warrant Agent shall not be responsible for any of the recitals or representations herein or in the Warrant Certificates (except as to the Warrant Agent's countersignature thereon), all of which are made solely by the Company.
- (i) No Implied Obligations. The Warrant Agent shall be obligated to perform only such duties as are herein and in the Warrant Certificates specifically set forth and no implied duties or obligations shall be read into this Agreement or the Warrant Certificates against the Warrant Agent. The Warrant Agent shall not be under any obligation to take any action hereunder which may tend to involve it in any expense or liability, the payment of which within a reasonable time is not, in its reasonable opinion, assured to it. The Warrant Agent shall not be accountable or under any duty or responsibility for the use by the Company of any of the Warrant Certificates authenticated by the Warrant Agent and delivered by it to the Company pursuant to this Agreement or for the application by the Company of the proceeds of the Warrant Certificates. The Warrant Agent shall have no duty or responsibility in case of any default by the Company in the performance of its covenants or agreements contained herein or in the Warrant Certificates or in the case of the receipt of any written demand from a Holder of a Warrant Certificate with respect to such default, including, without limiting the generality of the foregoing, any duty or responsibility to initiate or attempt to initiate any proceedings at law.

Section 15. Purchase or Consolidation or Change of Name of Warrant Agent. Any Person into which the Warrant Agent or any successor Warrant Agent may be merged or with which it may be consolidated, or any Person resulting from any merger or consolidation to which the Warrant Agent or any successor Warrant Agent shall be party, or any Person succeeding to the stock transfer or other shareholder services business of the Warrant Agent or any successor Warrant Agent, shall be the successor to the Warrant Agent under this Agreement without the execution or filing of any paper or any further act on the part of any of the parties hereto, provided that such Person would be eligible for appointment as a successor Warrant Agent under the provisions of Section 17. In case at the time such successor Warrant Agent shall succeed to the agency created by this Agreement any of the Warrant Certificates shall have been countersigned but not delivered, any such successor Warrant Agent may adopt the countersignature of the predecessor Warrant Agent and deliver such Warrant Certificates so countersigned; and in case at that time any of the Warrant Certificates shall not have been countersigned, any successor Warrant Agent may countersign such Warrant Certificates either in the name of the predecessor Warrant Agent or in the name of the successor Warrant Agent; and in all such cases such Warrant Certificates shall have the full force provided in the Warrant Certificates and in this Agreement.

In case at any time the name of the Warrant Agent shall be changed and at such time any of the Warrant Certificates shall have been countersigned but not delivered, the Warrant Agent may adopt the countersignature under its prior name and deliver Warrant Certificates so countersigned; and in case at that time any of the Warrant Certificates shall not have been countersigned, the Warrant Agent may countersign such Warrant Certificates either in its prior name or in its changed name; and in all such cases such Warrant Certificates shall have the full force provided in the Warrant Certificates and in this Agreement.

Section 16. Duties of Warrant Agent. The Warrant Agent undertakes the duties and obligations imposed by this Agreement upon the following terms and conditions, by all of which the Company, by its acceptance hereof, shall be bound:

(a) The Warrant Agent may consult with legal counsel reasonably acceptable to the Company (who may be legal counsel for the Company), and the opinion and advice of such counsel shall be full and complete authorization and protection to the Warrant Agent as to any action taken or omitted by it in good faith and in accordance with such opinion or advice.

(b) Whenever in the performance of its duties under this Agreement the Warrant Agent shall deem it necessary or desirable that any fact or matter be proved or established by the Company prior to taking or suffering any action hereunder, such fact or matter (unless other evidence in respect thereof be herein specifically prescribed) may be deemed to be conclusively proved and established by a certificate signed by the Chief Executive Officer, Chief Financial Officer or Vice President of the Company; and such certificate shall be full authorization and protection to the Warrant Agent for any action taken or suffered in good faith by it under the provisions of this Agreement in reliance upon such certificate.

(c) Subject to the limitation set forth in Section 14, the Warrant Agent shall be liable hereunder only for its own gross negligence, bad faith or willful misconduct, or for a breach by it of this Agreement.

(d) The Warrant Agent shall not be liable for or by reason of any of the statements of fact or recitals contained in this Agreement or in the Warrant Certificates (except its countersignature thereof) by the Company or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by the Company only.

(e) The Warrant Agent shall not be under any responsibility in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution hereof by the Warrant Agent) or in respect of the validity or execution of any Warrant Certificate (except its countersignature thereof); nor shall it be responsible for any breach by the Company of any covenant or condition contained in this Agreement or in any Warrant Certificate; nor shall it be responsible for the adjustment of the Exercise Price or the making of any change in the number of shares of Common Stock required under the provisions of Section 11 or 13 or responsible for the manner, method or amount of any such change or the ascertaining of the existence of facts that would require any such adjustment or change (except with respect to the exercise of Warrants evidenced by Warrant Certificates after actual notice of any adjustment of the Exercise Price); nor shall it by any act hereunder be deemed to make any representation or warranty as to the authorization or reservation of any shares of Common Stock to be issued pursuant to this Agreement or any Warrant Certificate or as to whether any shares of Common Stock will, when issued, be duly authorized, validly issued, fully paid and nonassessable.

(f) Each party hereto agrees that it will perform, execute, acknowledge and deliver or cause to be performed, executed, acknowledged and delivered all such further and other acts, instruments and assurances as may reasonably be required by the other party hereto for the carrying out or performing by any party of the provisions of this Agreement.

(g) The Warrant Agent is hereby authorized to accept instructions with respect to the performance of its duties hereunder from the Chief Executive Officer, Chief Financial Officer or Vice President of the Company, and to apply to such officers for advice or instructions in connection with its duties, and it shall not be liable and shall be indemnified and held harmless for any action taken or suffered to be taken by it in good faith in accordance with instructions of any such officer, provided Warrant Agent carries out such instructions without gross negligence, bad faith or willful misconduct.

(h) The Warrant Agent and any shareholder, director, officer or employee of the Warrant Agent may buy, sell or deal in any of the Warrants or other securities of the Company or become pecuniarily interested in any transaction in which the Company may be interested, or contract with or lend money to the Company or otherwise act as fully and freely as though it were not Warrant Agent under this Agreement. Nothing herein shall preclude the Warrant Agent from acting in any other capacity for the Company or for any other Person.

(i) The Warrant Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorney or agents, and the Warrant Agent shall not be answerable or accountable for any act, default, neglect or misconduct of any such attorney or agents or for any loss to the Company resulting from any such act, default, neglect or misconduct, provided reasonable care was exercised in the selection and continued employment thereof.

Section 17. Change of Warrant Agent. The Warrant Agent may resign and be discharged from its duties under this Agreement upon 30 days' notice in writing sent to the Company and to each transfer agent of the Common Stock, and to the Holders of the Warrant Certificates. The Company may remove the Warrant Agent or any successor Warrant Agent upon 30 days' notice in writing, sent to the Warrant Agent or successor Warrant Agent, as the case may be, and to each transfer agent of the Common Stock, and to the Holders of the Warrant Certificates. If the Warrant Agent shall resign or be removed or shall otherwise become incapable of acting, the Company shall appoint a successor to the Warrant Agent. If the Company shall fail to make such appointment within a period of 30 days after such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated Warrant Agent or by the Holder of a Warrant Certificate (who shall, with such notice, submit his Warrant Certificate for inspection by the Company), then the Holder of any Warrant Certificate may apply to any court of competent jurisdiction for the appointment of a new Warrant Agent, provided that, for purposes of this Agreement, the Company shall be deemed to be the Warrant Agent until a new warrant agent is appointed. Any successor Warrant Agent, whether appointed by the Company or by such a court, shall be a Person, other than a natural person, organized and doing business under the laws of the United States or of a state thereof, in good standing, which is authorized under such laws to exercise stock transfer powers and is subject to supervision or examination by federal or state authority and which has at the time of its appointment as Warrant Agent a combined capital and surplus of at least \$50,000,000. After appointment, the successor Warrant Agent shall be vested with the same powers, rights, duties and responsibilities as if it had been originally named as Warrant Agent without further act or deed; but the predecessor Warrant Agent shall deliver and transfer to the successor Warrant Agent any property at the time held by it hereunder, and execute and deliver any further assurance, conveyance, act or deed necessary for the purpose. Not later than the effective date of any such appointment, the Company shall file notice thereof in writing with the predecessor Warrant Agent and each transfer agent of the Common Stock, and mail a notice thereof in writing to the Holders of the Warrant Certificates. However, failure to give any notice provided for in this Section 17, or any defect therein, shall not affect the legality or validity of the resignation or removal of the Warrant Agent or the appointment of the successor Warrant Agent, as the case may be.

Section 18. Issuance of New Warrant Certificates. Notwithstanding any of the provisions of this Agreement or of the Warrants to the contrary, the Company may, at its option, issue new Warrant Certificates evidencing Warrants in such form as may be approved by its Board of Directors to reflect any adjustment or change in the Exercise Price per share and the number or kind or class of shares of stock or other securities or property purchasable under the several Warrant Certificates made in accordance with the provisions of this Agreement.

Section 19. Notices. Notices or demands authorized by this Agreement to be given or made (i) by the Warrant Agent or by the Holder of any Warrant Certificate to or on the Company, (ii) by the Company or by the Holder of any Warrant Certificate to or on the Warrant Agent or (iii) by the Company or the Warrant Agent to the Holder of any Warrant Certificate, shall be deemed given when in writing (a) on the date delivered, if delivered personally, (b) on the first Business Day following the deposit thereof with Federal Express or another recognized overnight courier, if sent by Federal Express or another recognized overnight courier, (c) on the fourth Business Day following the mailing thereof with postage prepaid, if mailed by registered or certified mail (return receipt requested), and (d) the date of transmission, if such notice or communication is delivered via facsimile or email attachment at or prior to 5:30 p.m. (New York City time) on a Business Day and (e) the next Business Day after the date of transmission, if such notice or communication is delivered via facsimile or email attachment on a day that is not a Business Day or later than 5:30 p.m. (New York City time) on any Business Day, in each case to the parties at the following addresses (or at such other address for a party as shall be specified by like notice):

(a) If to the Company, to:

Collectar Biosciences, Inc.
100 Campus Drive
Florham Park, NJ 07932
Attention: Chad Kolean, CFO and Corporate Secretary

(b) If to the Warrant Agent, to:

Equiniti Trust Company, LLC
28 Liberty Street, 53rd Floor
New York, NY 10005
Attention: Corporate Actions
Email: ReorgRM@Equiniti.com

With a copy to:

Equiniti Trust Company, LLC
28 Liberty Street, 53rd Floor
New York, NY 10005
Attention: Legal Department
Email: LegalTeamUS@equiniti.com

For any notice delivered by email to be deemed given or made, such notice must be followed by notice sent by overnight courier service to be delivered on the next Business Day following such email, unless the recipient of such email has acknowledged via return email receipt of such email.

(c) If to the Holder of any Warrant Certificate, to the address of such Holder as shown on the registry books of the Company. Any notice required to be delivered by the Company to the Holder of any Warrant may be given by the Warrant Agent on behalf of the Company. Notwithstanding any other provision of this Agreement, where this Agreement provides for notice of any event to a Holder of any Warrant, such notice shall be sufficiently given if given to the Depositary (or its designee) pursuant to the procedures of the Depositary or its designee.

Section 20. Supplements and Amendments.

(a) The Company and the Warrant Agent may from time to time supplement or amend this Agreement without the approval of any Holders of Global Warrants in order (i) to add to the covenants and agreements of the Company for the benefit of the Holders of the Global Warrants, (ii) to surrender any rights or power reserved to or conferred upon the Company in this Agreement, (iii) to cure any ambiguity, (iv) to correct or supplement any provision contained herein which may be defective or inconsistent with any other provisions herein, or (v) to make any other provisions with regard to matters or questions arising hereunder which the Company and the Warrant Agent may deem necessary or desirable, provided that such addition, correction or surrender shall not adversely affect the interests of the Holders of the Global Warrants or the Warrant Certificates in any material respect.

(b) In addition to the foregoing, with the consent of Holders of Warrants entitled, upon exercise thereof, to receive not less than a majority of the shares of Common Stock issuable thereunder, the Company and the Warrant Agent may modify this Agreement for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Agreement or modifying in any manner the rights of the Holders of the Global Warrants; provided, however, that no modification of the terms (including but not limited to the adjustments described in Section 11) upon which the Warrants are exercisable or reducing the percentage required for consent to modification of this Agreement may be made without the consent of the Holder of each outstanding warrant certificate affected thereby; provided further, however, that no amendment hereunder shall affect any terms of any Warrant Certificate issued in a Warrant Exchange. As a condition precedent to the Warrant Agent's execution of any amendment, the Company shall deliver to the Warrant Agent a certificate from a duly authorized officer of the Company that states that the proposed amendment complies with the terms of this Section 20. No supplement or amendment to this Agreement shall be effective unless duly executed by the Warrant Agent.

Section 21. Successors. All covenants and provisions of this Agreement by or for the benefit of the Company or the Warrant Agent shall bind and inure to the benefit of their respective successors and assigns hereunder.

Section 22. Benefits of this Agreement. Nothing in this Agreement shall be construed to give any Person other than the Company, the Holders of Warrant Certificates and the Warrant Agent any legal or equitable right, remedy or claim under this Agreement; but this Agreement shall be for the sole and exclusive benefit of the Company, the Warrant Agent and the Holders of the Warrant Certificates.

Section 23. Governing Law; Jurisdiction. This Agreement and each Warrant Certificate issued hereunder shall be governed by, and construed in accordance with, the laws of the State of New York without giving effect to the conflicts of law principles thereof. The Company hereby agrees that any action, proceeding or claim against it arising out of or relating in any way to this Agreement shall be brought and enforced in the courts of the State of New York or the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenience forum.

Section 24. Counterparts. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument. A signature to this Agreement transmitted electronically shall have the same authority, effect and enforceability as an original signature.

Section 25. Captions. The captions of the sections of this Agreement have been inserted for convenience only and shall not control or affect the meaning or construction of any of the provisions hereof.

Section 26. Severability. Wherever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Agreement; provided, however, that if such prohibited and invalid provision shall adversely affect the rights, immunities, liabilities, duties or obligations of the Warrant Agent, the Warrant Agent shall be entitled to resign immediately upon written notice to the Company.

Section 27. Force Majeure. Notwithstanding anything to the contrary contained herein, Warrant Agent shall not be liable for any delays or failures in performance resulting from acts beyond its reasonable control including, without limitation, acts of God, terrorist acts, shortage of supply, breakdowns or malfunctions, interruptions or malfunction of computer facilities, or loss of data due to power failures or mechanical difficulties with information storage or retrieval systems, labor difficulties, war, or civil unrest, it being understood that the Warrant Agent shall use reasonable best efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances. Notwithstanding anything herein to the contrary, this Section 27 shall not affect the Company's obligations to the Holders of the Warrants as provided herein.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

CELLECTAR BIOSCIENCES, INC.

By: _____
Name: Chad Kolean
Title: Chief Financial Officer and Corporate Secretary

EQUINITI TRUST COMPANY, LLC

By: _____
Name: _____
Title: _____

Annex A: Form of Warrant Certificate Request Notice

WARRANT CERTIFICATE REQUEST NOTICE

To: Equiniti Trust Company, LLC as Warrant Agent for Collectar Biosciences, Inc. (the “Company”)

The undersigned Holder of Series E Common Stock Purchase Warrants (“Warrants”) in the form of Global Warrants issued by the Company hereby elects to receive a Warrant Certificate evidencing the Warrants held by the Holder as specified below:

1. Name of Holder of Warrants in form of Global Warrants: _____
2. Name of Holder in Warrant Certificate (if different from name of Holder of Warrants in form of Global Warrants): _____
3. Number of Warrants in name of Holder in form of Global Warrants: _____
4. Number of Warrants for which Warrant Certificate shall be issued: _____
5. Number of Warrants in name of Holder in form of Global Warrants after issuance of Warrant Certificate, if any: _____
6. Warrant Certificate shall be delivered to the following address:

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Warrant Certificate, the Holder is deemed to have surrendered the number of Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Warrant Certificate.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

Exhibit 1-A: Form of Common Warrant Certificate

Exhibit 1-B: Form of Pre-Funded Warrant Certificate

Exhibit 2: Warrant Agent Fee Schedule

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated March 12, 2025 relating to the financial statements of Collectar Biosciences, Inc., appearing in the Annual Report on Form 10-K of Collectar Biosciences, Inc. for the year ended December 31, 2024. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ Deloitte & Touche LLP

Morristown, New Jersey

June 26, 2025

Calculation of Filing Fee Tables
Form S-1
(Form Type)

Collectar Biosciences, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward 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	Class A Units, each unit consisting of (i) one share of common stock, par value \$0.00001 per share ("Common Stock") and (ii) one warrant to purchase one share of Common Stock ("Common Warrant") (4)	457(o)	-	- \$ 6,900,000.00	0.00015310	\$ 1,056.39
Fees to Be Paid	Equity	Class B Units, each unit consisting of (i) one prefunded warrant to purchase one share of Common Stock ("Prefunded Warrant") and (ii) one Common Warrant (4)	457(o)	-	- Included above	-	-
Fees to Be Paid	Equity	Common Stock included in the Class A Units (4)	457(o)	-	- Included above	-	-
Fees to Be Paid	Equity	Common Warrants included in the Class A and Class B Units (4)	457(o)	-	- Included above	-	-
Fees to Be Paid	Equity	Prefunded Warrants included in the Class B Units (4)	457(o)	-	- Included Above	-	-
Fees to Be Paid	Equity	Shares of Common Stock issuable upon exercise of Prefunded Warrants (4)	457(o)	-	- Included above	-	-
Fees to Be Paid	Equity	Shares of Common Stock issuable upon exercise of the Common Warrants (5)	457(o)		\$ 7,590,000.00	0.00015310	\$ 1,162.03
Fees to Be Paid	Equity	Representative Warrants (6)	457(g)	-	- -	-	-
Fees to Be Paid	Equity	Shares of Common Stock issuable upon exercise of Representative Warrants (7)	457(o)	-	- \$ 641,700.00	0.00015310	\$ 98.25
Total Offering Amounts					\$ 15,131,700.00		\$ 2,316.67
Total Fees Previously Paid					\$ —		\$ —
Total Fee Offsets					—		—
Net Fee Due							\$ 2,316.67

- (1) Estimated solely for purposes 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 registered hereby also include an indeterminate number of additional securities as may from time to time become issuable by reason of stock splits, stock dividends, recapitalizations, or other similar transactions.
- (3) Includes the price of additional shares of Common Stock and Common Warrants that may be issued upon exercise of the over-allotment option granted to the underwriters to cover over-allotments, if any.
- (4) The proposed maximum aggregate offering price of the Class A Units will be reduced on a dollar-for-dollar basis based on the offering price of any Class B Units issued in the offering, and the proposed maximum aggregate offering price of the Class B Units to be issued in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any Class A Units issued in the offering. Accordingly, the proposed maximum aggregate offering price of the Class A Units and Class B Units (including the Common Stock issuable upon exercise of the Prefunded Warrants contained in the Class B Units), if any, is \$6,900,000.
- (5) As estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act, the proposed maximum aggregate offering price of the shares of Common Stock issuable upon the exercise of the Common Warrants is \$7,590,000, which is equal to 110% of \$6,900,000.
- (6) No fee pursuant to Rule 457(g) of the Securities Act because the representative warrants are being registered in the same registration statement as the common stock issuable upon exercise of the representative warrants.
- (7) The registrant has agreed to issue upon the closing of this offering, warrants (the "Representative Warrants") to the representative of the underwriters entitling it to purchase up to 6% of the number of shares of Class A Units and Class B Units sold in this offering. The exercise price of the Representative Warrants is equal to 155% of the public offering price of the securities offered hereby. As estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act, the proposed maximum aggregate offering price of the Representative Warrants is \$641,700, which is equal to 155% of \$414,000 (6% of \$6,900,000).