

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

**AMENDMENT NO. 2
TO
FORM S-1**

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

LIXTE BIOTECHNOLOGY HOLDINGS, 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)

20-2903526

(I.R.S. employer
identification number)

**680 East Colorado Boulevard, Suite 180
Pasadena, CA 91101
(631) 830-7092**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Geordan Pursglove
Chief Executive Officer
680 East Colorado Boulevard, Suite 180
Pasadena, CA 91101
(631) 830-7092**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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

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

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

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

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

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

Large accelerated filer ☐
Non-accelerated filer ☒

Accelerated filer ☐
Smaller reporting company ☒
Emerging growth company ☐

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

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 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 prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and

The information in this prospectus is not complete and may be changed. The securities may not be sold until the registration statement filed with the SEC is declared effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated July 10, 2025

PRELIMINARY PROSPECTUS

12,626,054 Shares of Common Stock

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

This prospectus relates to the resale from time to time by the selling stockholders named in this prospectus (the “Selling Stockholders”) for up to an aggregate of 12,626,054 shares of our common stock, par value \$0.0001 per share (the “Common Stock”) consisting of (i) 59,552 shares of the Company’s Common Stock (the “Common Shares”) issued in connection with a private placement of the Company’s securities, which initially closed on July 2, 2025 (the “July 2025 Private Placement”); (ii) 2,322,532 shares of Common Stock issuable pursuant to exercise of Pre-Funded Warrants (the “Pre-Funded Warrant Shares”) issued in the July 2025 Private Placement; (iii) 6,355,214 shares of Common Stock issuable pursuant to the exercise of Common Stock Warrants (the “July 2025 Warrant Shares”) issued in the July 2025 Private Placement; (iv) 3,573,130 shares of Common Stock issuable pursuant to the conversion of the Company’s Series B Preferred Stock (the “Conversion Shares”) issued in the July 2025 Private Placement; and (v) 315,626 shares of Common Stock issuable pursuant to the exercise of Common Stock Warrants issued to the Placement Agent (the “July 2025 Placement Agent Shares”). The Common Shares, the Pre-Funded Shares, the July 2025 Warrant Shares, the Conversion Shares, and the July 2025 Placement Agent Shares are collectively referred to as the “Shares”. We are registering the Shares on behalf of the Selling Stockholders to be offered and sold by them from time to time. We will not receive any proceeds from the sale of the Shares offered by this prospectus. The Offering was priced at-the-market under Nasdaq rules.

We have agreed to bear all of the expenses incurred in connection with the registration of the Shares. The Selling Stockholders will pay or assume discounts, commissions, fees of underwriters, selling brokers, or dealer managers, and similar expenses, if any, incurred for the sale of the Shares of our Common Stock.

The Selling Stockholders, or their respective donees, pledgees, transferees, or other successors-in-interest, may sell or otherwise dispose of the Shares covered by this prospectus in a number of different ways. We provide more information about how the Selling Stockholders may sell or otherwise dispose of their resale securities in the section entitled “Plan of Distribution.” For a list of the Selling Stockholders, see the section entitled “Selling Stockholders.”

Our common stock is listed on the Nasdaq Capital Market under the symbol “LIXT”. The closing price of our common stock on the Nasdaq Capital Market on July 3, 2025 was \$2.83 per share.

Investing in our securities is speculative and involves a high degree of risk. You should carefully consider the risk factors beginning on page 16 of this prospectus before purchasing our securities.

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.

The date of this prospectus is July 10, 2025.

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ABOUT THIS PROSPECTUS

You should rely only on the information contained in or incorporated by reference into this prospectus and in any free writing prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus. The sale of our securities will only be made in jurisdictions where offers and sales are permitted. The information in this prospectus is accurate only as of the date of this prospectus, and any information we have incorporated by reference is accurate only as of the

date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of our securities.

We have not done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of our securities and the distribution of this prospectus outside of the United States.

We own or have rights to trademarks or trade names that we use in connection with the operation of our business, including our corporate names, logos and website names. In addition, we own or have the rights to copyrights, trade secrets and other proprietary rights that protect the content of our products. This prospectus may also contain trademarks, service marks and trade names of other companies, which are the property of their respective owners. Our use or display of third parties' trademarks, service marks, trade names or products in this prospectus is not intended to, and should not be read to, imply a relationship with or endorsement or sponsorship of us. Solely for convenience, some of the copyrights, trade names and trademarks referred to in this prospectus are listed without their ©, ® and ™ symbols, but we will assert, to the fullest extent under applicable law, our rights to our copyrights, trade names and trademarks. All other trademarks are the property of their respective owners.

PROSPECTUS SUMMARY

The following summary highlights information contained or incorporated by reference elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our securities, you should carefully read this entire prospectus, including our consolidated financial statements and the related notes and other documents incorporated by reference herein, as well as the information under the caption "Risk Factors" herein and under similar headings in the other documents that are incorporated by reference into this prospectus including documents that are filed after the date hereof. Some of the statements in this prospectus constitute forward-looking statements that involve risks and uncertainties. See "Cautionary Note Regarding Forward-Looking Statements". Our actual results could differ materially from those anticipated in such forward-looking statements as a result of certain factors, including those discussed in the "Risk Factors" and other sections included in or incorporated by reference herein. In this prospectus, unless otherwise stated or the context otherwise requires, references to "Lixte", the "Company", "we", "us", "our", or similar references mean Lixte Biotechnology Holdings, Inc.

Company Overview

We are a clinical-stage biopharmaceutical company focused on identifying new targets for cancer drug development and developing and commercializing cancer therapies. Our product pipeline is primarily focused on inhibitors of protein phosphatase 2A, which are used to enhance cytotoxic agents, radiation, immune checkpoint blockers and other cancer therapies. We believe that inhibitors of protein phosphatases have significant therapeutic potential for a broad range of cancers. We are focusing on the clinical development of a specific protein phosphatase inhibitor, referred to as LB-100, which has been shown to have clinical anti-cancer activity.

We believe that the mechanism by which LB-100 affects cancer cell growth is different from cancer agents currently approved for clinical use. LB-100 is currently being tested in clinical trials in Ovarian Clear Cell Carcinoma, Metastatic Micro Satellite Stable (MSS) Colon Cancer, and Advanced Soft Tissue Sarcoma. LB-100 has shown anti-cancer activity in animal models of glioblastoma multiforme, neuroblastoma, and medulloblastoma, all cancers of neural tissue. LB-100 has also been shown to enhance the effectiveness of commonly used anti-cancer drugs in animal models of melanoma, breast cancer and sarcoma. The enhancement of anti-cancer activity of these anti-cancer drugs occurs at doses of LB-100 that do not significantly increase toxicity in animals. It is therefore hoped that, when combined with standard anti-cancer regimens against many tumor types, LB-100 will improve therapeutic benefit.

As a compound moves through the FDA-approval process, it becomes an increasingly valuable property, but at a cost of additional investment at each stage. As the potential effectiveness of LB-100 has been documented at the clinical trial level, we have allocated resources to expand the breadth and depth of its patent portfolio. Our approach has been to operate with a minimum of overhead, moving compounds forward as efficiently and inexpensively as possible, and to raise funds to support each of these stages as certain milestones are reached. Our longer-term objective is to secure one or more strategic partnerships or licensing agreements with pharmaceutical companies with major programs in cancer.

Our activities are subject to significant risks and uncertainties, including the need for additional capital. We have not yet commenced any revenue-generating operations, do not have positive cash flows from operations, rely on stock-based compensation for a substantial portion of employee and consultant compensation, and are dependent on periodic access to equity capital to fund its operating requirements.

Description of Business

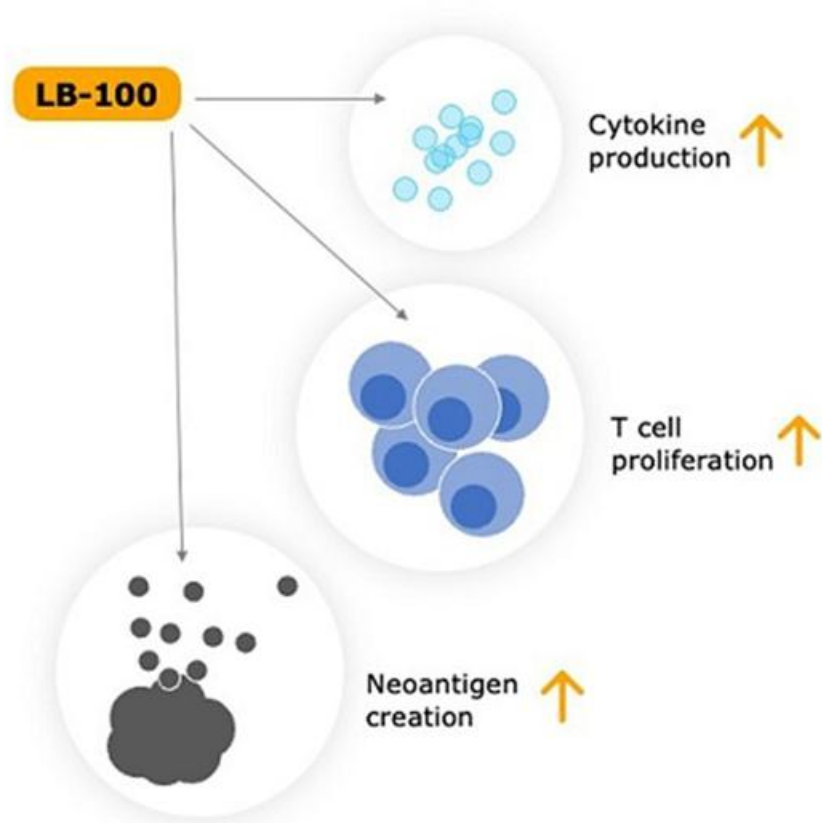
Most cancer patients are treated with either chemotherapy or immunotherapy or both. These therapies often have limited benefit and there is a high unmet medical need to enhance their effects. In many preclinical models we have shown that LB-100 enhances the effect of both chemotherapy and Immunotherapy



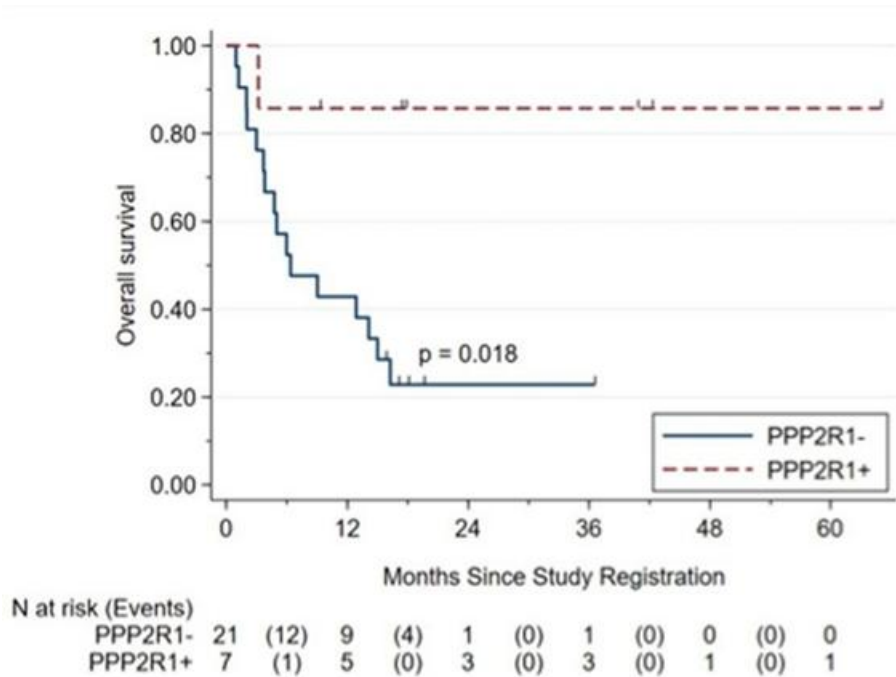
LB-100, a small molecule potent inhibitor of PP2A, was designed and developed by us. Numerous preclinical studies have documented that LB-100 potentiates most if not all anti-cancer drugs that damage DNA. LB-100 is not associated with any increase in cytotoxicity when given with cytotoxic drugs. This synergy involves transient interruption of several DNA damage repair pathways by LB-100 and an increase in cell division rate. LB-100 has FDA Investigational New Drug status in the US and Investigational Medicinal Product Dossier approval in the European Union.

In its initial Phase 1 clinical trial, LB-100 given alone daily for 3 days was non-toxic, except for a transient increase in serum creatinine believed to be caused by inhibition of PP2A in the renal tubules. In the Phase 1 clinical trial, the Maximum Tolerated Dose ("MTD") was 2.33mg/m² daily for 3 days every 3 weeks. Of the 25 patients with heavily-treated advanced solid tumors with measurable disease, 3 patients had stable disease for 2 cycles, 3 patients had stable disease for 4 cycles, and 3 patients had stable disease for 6 cycles. One patient with pancreatic cancer had a partial response after 12 cycles lasting 534 days.

Low doses of LB-100 have now been shown to enhance immune checkpoint inhibition ("ICI") by several different mechanisms affecting the tumor compartment and immune T-cell compartment. LB-100 increases CD8⁺T-cell infiltration and CD8⁺Treg ratio, CD8⁺T-cell proliferation, and cytokine production induces microsatellite



Ovarian clear cell carcinoma patients with inactivating mutations in PPP2R1A, a gene coding for a scaffold component of PP2A, and treated with immune checkpoint inhibitors, were recently found to have markedly longer survival than patients without the mutation in their cancers. Retrospective reviews of patients with a variety of cancers treated with ICI or chemotherapy show much longer survival of ICI-treated patients with a PPP2R1A mutation in their tumors.



Based on the observations in ovarian clear cell carcinoma, we have initiated a clinical trial in this disease combining LB-100 with a monoclonal antibody blocking PD-1, a protein found on T-cells (NCT06065462).

Given these preclinical and clinical observations, it is likely that LB-100 may be a general way to enhance immunotherapy responses.

		Pre-Clinical	Phase 1b	Phase 2	Phase 3	Status
LB-100 + Immunotherapy	Ovarian Clear Cell Cancer	NCT06065462				Actively Recruiting at MD Anderson And Northwestern. GSK sponsored
LB-100 + Immunotherapy	Metastatic MSI Low Colon Cancer	NCT06012734				Open at Netherlands Cancer Institute Roche sponsored.
LB-100 + Chemotherapy	Advanced Soft Tissue Sarcoma (ASTS)	NCT05809830				Completed dose escalation phase. Full report Phase 1 mid 2025

The research on the LB-100 series was initiated in 2006 under a Cooperative Research and Development Agreement (“CRADA”) with the National Institute of Neurologic Disorders and Stroke or NINDS of the National Institutes of Health or NIH dated March 22, 2006 that was subsequently extended through a series of amendments until it terminated on April 1, 2013.

We have also designed and developed the LB-200 series, which consists of histone deacetylase inhibitors (HDACi). LB-200 has not advanced to the clinical stage and would require additional capital to fund further development. Accordingly, because of our focus on the clinical development of LB-100 and analogs for cancer therapy as described below in more detail, we have decided not to actively pursue the preclinical development of our LB-200 series of compounds at this time.

Clinical Trial Agreements

Spanish Sarcoma Group Collaboration Agreement

Effective July 31, 2019, we entered into a Collaboration Agreement for an Investigator-Initiated Clinical Trial with the Spanish Sarcoma Group (Grupo Español de Investigación en Sarcomas or “GEIS”), Madrid, Spain, to carry out a study entitled “Randomized phase I/II trial of LB-100 plus doxorubicin vs. doxorubicin alone in first line of advanced soft tissue sarcoma”. The purpose of this clinical trial is to obtain information with respect to the efficacy and safety of LB-100 combined with doxorubicin in soft tissue sarcomas. Doxorubicin is the global standard for initial treatment of advanced soft tissue sarcomas (“ASTS”). Doxorubicin alone has been the mainstay of first line treatment of ASTS for over 40 years, with little improvement in survival from adding cytotoxic compounds to or substituting other cytotoxic compounds for doxorubicin. In animal models, LB-100 consistently enhances the anti-tumor activity of doxorubicin without apparent increases in toxicity.

GEIS has a network of referral centers in Spain and across Europe that have an impressive track record of efficiently conducting innovative studies in ASTS. We agreed to provide GEIS with a supply of LB-100 to be utilized in the conduct of this clinical trial, as well as to provide funding for the clinical trial. The goal is to enter approximately 150 to 170 patients in this clinical trial over a period of two to four years. The Phase 1 portion of the study began in the quarter ended June 30, 2023 to determine the recommended Phase 2 dose of the combination of doxorubicin and LB-100. As advanced sarcoma is a very aggressive disease, the design of the Phase 2 portion of the study assumes a median progression-free survival (“PFS”), no evidence of disease progression or death from any cause) of 4.5 months in the doxorubicin arm and an alternative median PFS of 7.5 months in the doxorubicin plus LB-100 arm to demonstrate a statistically significant decrease in relative risk of progression or death by adding LB-100. There is a planned interim analysis of the primary endpoint when approximately 50% of the 102 events required for final analysis is reached.

On October 13, 2022, we announced that the Spanish Agency for Medicines and Health Products (Agencia Española de Medicamentos y Productos Sanitarios or “AEMPS”) had authorized a Phase 1b/randomized Phase 2 study of LB-100, our lead clinical compound, plus doxorubicin, versus doxorubicin alone, the global standard for initial treatment of advanced soft tissue sarcomas (ASTS). Consequently, this clinical trial commenced during the quarter ended June 30, 2023 and to be completed and a report prepared by December 31, 2026. In April 2023, GEIS completed its first site initiation visit in preparation for the clinical trial at Fundación Jiménez Díaz University Hospital (Madrid). Up to 170 patients will be entered into the clinical trial. The recruitment phase of the Phase 1b portion of the protocol was completed during the quarter ended September 30, 2024. We expect to have data on toxicity and preliminary efficacy from this portion of the clinical trial during the quarter ending December 31, 2025.

Given the focus on the combination of LB-100 with immunotherapy in ovarian clear cell carcinoma and colorectal cancer and the availability of capital resources, we entered into Amendment No. 1 to the Collaboration Agreement effective March 11, 2025 that relieved us of the financial obligation to support the randomized Phase 2 portion of the clinical trial contemplated in the Collaboration Agreement of approximately \$3,095,000. As a result, it is uncertain as to whether the Phase 2 portion of this clinical trial will proceed.

Clinical Research Support Agreement Relating to Small Cell Lung Cancer

We had executed a Clinical Research Support Agreement with the City of Hope National Medical Center to carry out a Phase 1b clinical trial of LB-100 combined with an FDA-approved standard regimen for treatment of untreated extensive-stage disease small cell lung cancer. The clinical trial was initiated on March 9, 2021. However, due to the lack of patient accrual, the Company provided notice to the City of Hope National Medical Center of our intent to terminate the Clinical Research Support Agreement effective as of July 8, 2024.

MD Anderson Cancer Center Clinical Trial

On September 20, 2023, we announced an investigator-initiated Phase 1b/2 collaborative clinical trial to assess whether adding LB-100 to a human programmed death receptor-1 (“PD-1”) blocking antibody of GSK plc (“GSK”), dostarlimab-gxly, may enhance the effectiveness of immunotherapy in the treatment of ovarian clear cell carcinoma (“OCCC”). The clinical trial is being sponsored by The University of Texas MD Anderson Cancer Center (“MD Anderson”) and is being conducted at The University of Texas – MD Anderson Cancer Center. We are providing LB-100 and GSK is providing dostarlimab-gxly and financial support for the clinical trial. On January 29, 2024, we announced the entry of the first patient into this clinical trial. We currently expect that this clinical trial will be completed by December 31, 2027.

On February 25, 2025, we announced that we had added the Robert H. Lurie Comprehensive Cancer Center (Lurie Cancer Center) of Northwestern University as a second site in a clinical trial combining the Company’s proprietary compound LB-100 with GSK’s dostarlimab to treat ovarian clear cell cancer. Patient recruitment is underway, and the first patient has been dosed.

Netherlands Cancer Institute Clinical Trial

Effective June 10, 2024, we entered into a Clinical Trial Agreement with the Netherlands Cancer Institute (“NKI”) to conduct a Phase 1b clinical trial of the Company’s protein phosphatase inhibitor, LB-100, combined with atezolizumab, a PD-L1 inhibitor, the proprietary molecule of F. Hoffman-La Roche Ltd. (“Roche”), for patients with microsatellite stable metastatic colon cancer. Under the agreement, we will provide our lead clinical compound, LB-100, and under a separate agreement between

NKI and Roche, Roche will provide atezolizumab and financial support for the clinical trial. We have no obligation to and will not provide any reimbursement of clinical trial costs. Pursuant to the agreement and the protocol set forth in the agreement, the clinical trial will be conducted by NKI at NKI's site in Amsterdam by principal investigator Neeltje Steeghs, MD, PhD, and NKI will be responsible for the recruitment of patients. The agreement provides for the protection of the respective intellectual property rights of each of Lixte, NKI and Roche.

This Phase 1b clinical trial will evaluate safety, optimal dose and preliminary efficacy of LB-100 combined with atezolizumab for the treatment of patients with metastatic microsatellite stable colorectal cancer. Immunotherapy using monoclonal antibodies like atezolizumab can enhance the body's immune response against cancer and hinder tumor growth and spread. LB-100 has been found to improve the effectiveness of anticancer drugs in killing cancer cells by inhibiting a protein called PP2A on cell surfaces. Blocking PP2A increases stress signals in tumor cells expressing the PP2A protein. Accordingly, combining atezolizumab with LB-100 may enhance treatment efficacy for metastatic colorectal cancer, as cancer cells with heightened stress signals are more vulnerable to immunotherapy.

This study comprises a dose escalation phase and a dose expansion phase. The objective of the dose escalation phase is to determine the recommended Phase 2 dose (RP2D) of LB-100 when combined with the standard dosage of atezolizumab. The dose expansion phase will further investigate the preliminary efficacy, safety, tolerability, and pharmacokinetics/dynamics of the LB-100 and atezolizumab combination. The clinical trial opened in August 2024 with the enrollment of the first patient. Patient accrual is expected to take up to 24 months, with a maximum of 37 patients with advanced colorectal cancer to be enrolled in this study.

The shelf life of the batch of LB-100 being utilized in this clinical trial was scheduled to expire on December 25, 2025, but has been extended for a final time for a period of 12 months through December 25, 2026, after which date no new patients can be recruited into this clinical trial and no patients can be treated with the current batch of LB-100. Although we do not currently intend to commission the production of a new batch of LB-100 for this clinical trial, we believe that it is likely that we will be able to recruit enough patients in sufficient time into this clinical trial to be able to reach an evaluable outcome for all end points in this clinical trial by December 25, 2026. The expiration of the shelf life of this batch of LB-100 represents an effective termination date of this clinical trial.

The principal investigator of the colorectal study testing LB-100 in combination with atezolizumab is currently investigating two Serious Adverse Events ("SAEs") observed in the clinical trial that was launched in August 2024. The Investigational Review Board (IRB) of the Netherlands Cancer Institute has requested additional information with respect to these SAEs and the study has been paused for enrollment until the IRB's questions have been, as more fully discussed below at "Risks Related to the Development and Regulatory Approval of Our Product Candidates - *A clinical trial hold due to serious adverse events could delay or halt the development of our product candidate*".

National Cancer Institute Pharmacologic Clinical Trial

In May 2019, the National Cancer Institute (NCI) initiated a glioblastoma (GBM) pharmacologic clinical trial. This study was being conducted and funded by the NCI under a Cooperative Research and Development Agreement, with the Company being required to provide the LB-100 clinical compound.

Primary malignant brain tumors (gliomas) are very challenging to treat. Radiation combined with the chemotherapeutic drug temozolomide has been the mainstay of therapy of the most aggressive gliomas (glioblastoma multiforme or GBM) for decades, with little further benefit gained by the addition of one or more anti-cancer drugs, but without major advances in overall survival for the majority of patients. In animal models of GBM, the Company's novel protein phosphatase inhibitor, LB-100, has been found to enhance the effectiveness of radiation, temozolomide chemotherapy treatments and immunotherapy, raising the possibility that LB-100 may improve outcomes of standard GBM treatment in the clinic. Although LB-100 has proven safe in patients at doses associated with apparent anti-tumor activity against several human cancers arising outside the brain, the ability of LB-100 to penetrate tumor tissue arising in the brain was not known. Many drugs potentially useful for GBM treatment do not enter the brain in amounts necessary for anti-cancer action.

The NCI study was designed to determine the extent to which LB-100 enters recurrent malignant gliomas. Patients having surgery to remove one or more tumors received one dose of LB-100 prior to surgery and had blood and tumor tissue analyzed to determine the amount of LB-100 present and to determine whether the cells in the tumors showed the biochemical changes expected to be present if LB-100 reached its molecular target. As a result of the innovative design of the NCI study, it was believed that data from a few patients would be sufficient to provide a sound rationale for conducting a larger clinical trial to determine the effectiveness of adding LB-100 to the standard treatment regimen for GBMs. Blood and brain tumor tissue were analyzed from seven patients after intravenous infusion of a single dose of LB-100. Results of the investigation demonstrated that there was virtually no entry of LB-100 into the brain tumor tissue. Accordingly, alternative methods of drug delivery will be required to determine if LB-100 has meaningful clinical anti-cancer activity against glioblastoma multiforme and other aggressive brain tumors.

Patent and License Agreements

National Institute of Health

Effective February 23, 2024, we entered into a Patent License Agreement (the "License Agreement") with the National Institute of Neurological Disorders and Stroke ("NINDS") and the National Cancer Institute ("NCI"), each an institute or center of the National Institute of Health ("NIH"). Pursuant to the License Agreement, we have licensed exclusively NIH's intellectual property rights claimed for a Cooperative Research and Development Agreement ("CRADA") subject invention co-developed with the Company, and the licensed field of use, which focuses on promoting anti-cancer activity alone, or in combination with standard anti-cancer drugs. The scope of this clinical research extends to checkpoint inhibitors, immunotherapy, and radiation for the treatment of cancer. The License Agreement is effective, and shall extend, on a licensed product, licensed process, and country basis, until the expiration of the last-to-expire valid claim of the jointly owned licensed patent rights in each such country in the licensed territory, unless sooner terminated.

The License Agreement contemplates that we will seek to work with pharmaceutical companies and clinical trial sites (including comprehensive cancer centers) to initiate clinical trials within timeframes that will meet certain benchmarks. Data from the clinical trials will be the subject of various regulatory filings for marketing approval in applicable countries in the licensed territories. Subject to the receipt of marketing approval, we would be expected to commercialize the licensed products in markets where regulatory approval has been obtained.

Other Significant Agreements and Contracts

Netherlands Cancer Institute

On October 8, 2021, we entered into a Development Collaboration Agreement with the Netherlands Cancer Institute, Amsterdam ("NKI"), one of the world's leading comprehensive cancer centers, and Oncode Institute, Utrecht, a major independent cancer research center, for a term of three years. The Development Collaboration Agreement was subsequently modified by Amendment No. 1 thereto.

The Development Collaboration Agreement is a preclinical study intended to identify the most promising drugs to be combined with LB-100, and potentially LB-100 analogues, to be used to treat a range of cancers, as well as to identify the specific molecular mechanisms underlying the identified combinations. We agreed to fund the preclinical study, at an approximate cost of 391,000 Euros and provide a sufficient supply of LB-100 to conduct the preclinical study.

On October 3, 2023, we entered into Amendment No. 2 to the Development Collaboration Agreement with NKI, which provides for additional research activities, extends the termination date of the Development Collaboration Agreement by two years to October 8, 2026, and added 500,000 Euros to the operating budget being funded by us.

On October 4, 2024, we entered into Amendment No. 3 to the Development Collaboration Agreement with NKI, which suspended Amendment No. 2 and provided for a new study term of one year and starts upon the dosing of the first patient in the clinical trial at a project cost of 100,000 Euros.

Effective as of June 15, 2022, Dr. René Bernards was appointed to our Board of Directors as an independent director. Dr. Bernards is a leader in the field of molecular carcinogenesis and is employed by NKI.

Intellectual Property

Our intellectual property includes proprietary know-how, proprietary methodologies and extensive clinical validation data and publications. To provide legal protection of our intellectual property, we rely on a combination of patents, licenses, trade secrets, trademarks, confidentiality and non-disclosure clauses and agreements, and other forms of intellectual property protection to define and protect our rights to our products.

Our products are expected to be covered by our patents. These patents now cover sole rights to the composition and synthesis of our LB-100 series of drugs, which is the Company's lead clinical compound in development. Lixte has filed patent applications covering the treatment of cancer with LB-100. Lixte has also filed joint patent applications with the NIH and the Netherlands Cancer Institute for the treatment of cancer using LB-100 in combination with other drugs like immune checkpoint inhibitors and WEE1 inhibitors (a class of drugs that target and inhibit the WEE1 kinase enzyme that plays a crucial role in regulating cell division).

Patent applications for the LB-100 series (oxabicycloheptanes and oxabicycloheptenes) have been filed in the United States and internationally under the Patent Cooperation Treaty. Patents for composition of matter and for several uses of the LB-100 series have been issued in the United States, Mexico, Australia, Japan, China, Hong Kong, Canada, and by the European Patent Office

We strive to protect and enhance the proprietary technology, inventions, and improvements that are commercially important to the development of our business, including seeking, maintaining, and defending its patent rights, which are owned solely by our wholly-owned Delaware subsidiary, Lixte Biotechnology, Inc., except in several instances jointly with one of many of our collaborators. We also rely on trade secrets relating to its proprietary pipeline of product candidates and on know-how and continuing technological innovation to develop and strengthen its pipeline. We intend to rely on regulatory protection afforded by regulatory agencies through data exclusivity, market exclusivity, and patent term extensions, where available.

Our success will depend in large part on its ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to its business; defend and enforce its patents; preserve the confidentiality of its trade secrets; and operate without infringing valid and enforceable patents or proprietary rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell, or importing our technology may depend on the extent to which we have rights under valid and enforceable licenses, patents, or trade secrets that cover these activities. In some cases, enforcement of these rights may depend on cooperation of the joint owners of our jointly owned patents and patent applications.

With respect to both our solely and jointly owned intellectual property, we cannot be sure that patents will be granted on any of its pending patent applications or on any patent applications filed solely or jointly by us in the future; we cannot be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our intended commercial products or therapeutic methods; and we cannot be sure that an agency or court would determine that the our solely or jointly owned patents are valid and enforceable.

Nasdaq Compliance

On August 19, 2024, we received a letter from the Listing Qualifications Department (the "Staff") of the Nasdaq Stock Market LLC indicating that we were not in compliance with the minimum stockholders' equity requirement of \$2,500,000 for continued listing on the Nasdaq Capital Market under Listing Rule 5550(b) (the "Equity Rule").

On October 3, 2024, we submitted a plan to the Staff to regain compliance with the Equity Rule, which outlined our proposed initiatives to regain compliance by raising equity capital through various registered equity offerings.

On October 21, 2024, the Staff provided notice to us that it had granted an extension through February 18, 2025 to regain compliance with the Equity Rule.

As of February 18, 2025, we had not regained compliance with the Equity Rule. Accordingly, on February 19, 2025, we received a Staff determination letter from the Staff stating that we did not meet the terms of the extension because we did not complete our proposed financing initiatives to regain compliance. We timely requested a Hearing before a Nasdaq Hearings Panel (the "Panel"), which automatically stayed Nasdaq's suspension or delisting of our common stock and public warrants pending the Panel's decision.

On April 17, 2025, we received notice that the Panel had granted us an extension in which to regain compliance with all continued listing rules of the Nasdaq Capital Market. The Panel's determination followed a hearing on April 3, 2025, at which time the Panel considered our plan to regain compliance with the Equity Rule. As a result of the extension, the Panel granted our request for continued listing on the Nasdaq Capital Market, provided that we demonstrate compliance with the Equity Rule and all other continued listing requirements for the Nasdaq Capital Market by July 3, 2025.

In order for us to satisfy the decision of the Panel and to provide the working capital resources to fund our operations, (i) effective July 2, 2025, the Company completed a private placement of common stock units and preferred stock units for gross proceeds of \$5,050,000 and (ii) effective July 8, 2025, the Company completed a registered direct offering of common stock for gross proceeds of \$1,500,000. However, there can be no assurances that the Panel will deem the proceeds from these offerings as sufficient to comply with the Equity Rule and all other continued listing requirements for the Nasdaq Capital Market. Accordingly, even if we complete these offerings, there can be no assurances that we will be able to regain compliance and be able to maintain our listing on the Nasdaq Capital Market.

During the extension period, our common stock and public warrants will continue to trade on the Nasdaq Capital Market.

Corporate Information

We were incorporated as a Delaware Corporation on May 24, 2005 under the name SRKP7, Inc. On June 30, 2006, pursuant to a share exchange agreement, we acquired all of the outstanding shares of Lixte Biotechnology, Inc. which then became a wholly owned subsidiary. On December 7, 2006, we changed our name to Lixte Biotechnology Holdings, Inc.

Effective September 26, 2023, Bastiaan van der Baan, a director of the Company since June 17, 2022, replaced our founder, John S. Kovach, as President and Chief Executive Officer. Dr. Kovach passed away on October 5, 2023. Effective October 6, 2023, Mr. van der Baan was appointed as Chairman of the Board of Directors.

As discussed below, effective June 16, 2025, Mr. van der Baan resigned as Chairman of the Board of Directors and Chief Executive Officer, but remained as President and as a member of the Board of Directors, and was appointed as the Company's Chief Scientific Officer, and Geordan Pursglove was appointed as Chairman of the Board of Directors and Chief Executive Officer.

Our common stock and public warrants are traded on the Nasdaq Capital Market under the symbols "LIXT" and "LIXTW", respectively. On June 2, 2023, we effected a one-for-ten reverse split of our outstanding shares of common stock in order to remain in compliance with the \$1.00 minimum closing bid price requirement of the Nasdaq Capital Market.

Our principal address is 680 East Colorado Boulevard, Suite 180, Pasadena, CA 91101. Our telephone number is (631) 830-7092. We maintain a website at <https://lixte.com>. The information contained on our website is not, and should not be interpreted to be, incorporated into this prospectus.

July 2025 Private Placement

On June 30, 2025, we entered into a Securities Purchase Agreement with certain purchasers named therein, pursuant to which we agreed to issue and sell, in a private placement (the "July 2025 Private Placement") the Common Shares, Pre-Funded Warrants to purchase 3,573,130 shares of Common Stock, the July 2025 Warrants to purchase 6,355,214 shares of Common Stock, and Series B Preferred Shares initially convertible into 3,573,130 shares of Common Stock. The July 2025 Private Placement resulted in gross proceeds of \$5,050,000 before deducting the placement agent's fees and related offering expenses. The initial closing occurred on July 2, 2025 with the Company receiving gross proceeds of \$4,050,000. The remaining \$1,000,000 of gross proceeds will be paid at such time as this Registration Statement has been declared effective by the Securities and Exchange Commission. Pursuant to a Placement Agent Agreement dated as of June 30, 2025, we engaged Spartan Capital Securities, LLC to act as our exclusive Placement Agent in connection with the July 2025 Private Placement and we issued to the Placement Agent or its designees warrants to purchase 315,626 shares of Common Stock.

The exercise prices of the warrants issued to the purchasers and to the placement agent are subject to customary adjustments for stock splits, stock dividends, stock combinations, reclassifications, reorganizations, or similar events affecting our common stock. In addition, the warrants issued contain a "fundamental transaction" provision whereby in the event of a fundamental transaction (including a sale or transfer of assets or ownership of the Company as defined in the warrant agreement) within our control, the holders of the unexercised common stock warrants would be entitled to receive, in exchange for extinguishment of the warrants, cash consideration equal to a Black-Scholes valuation, as defined in the warrant agreement. If such fundamental transaction is not within our control, the warrant holders would only be entitled to receive the same form of consideration (and in the same proportion) as the holders of our common stock.

Accordingly, in the event of a change in control of the Company or a sale or transfer of all or substantially all of our assets, as defined in the July 2025 Warrants, to the extent that the warrants are outstanding at the effective date that such a transaction is closed, this "fundamental transaction" provision would entitle the holders to substantial cash consideration, thus reducing the amounts to be retained by us or potentially distributable to our stockholders.

July 2025 Registered Direct Offering

On July 3, 2025, the Company entered into a Securities Purchase Agreement with certain purchasers named therein, pursuant to which the Company agreed to issue and sell, in a registered direct offering (the "July 2025 Registered Direct Offering") 210,675 shares of Common Stock and Pre-Funded Warrants to purchase 763,351 shares of Common Stock at an offering price of \$1.54 per share (or \$1.53999 per Pre-Funded Warrant). The Offering resulted in gross proceeds of \$1,500,000 before deducting placement agent's fees and related offering expenses. The Offering closed on July 8, 2025.

Executive Management and Director Changes

Prior to and effective as of the consummation of this private placement, there have been several changes with respect to our executive management and the Board of Directors as described herein.

Bastiaan van der Baan. Effective June 16, 2025, Bastiaan van der Baan resigned as Chairman of the Board of Directors and as Chief Executive Officer, but remained as President and as a member of the Board of Directors, and was appointed as Chief Scientific Officer. Mr. van der Baan's principal responsibility as President will be related to the clinical development of our LB-100 lead compound. His responsibility as Chief Scientific Officer (CSO) will be for shaping and executing the scientific vision and research and development strategy of the Company, with a focus on discovering and developing innovative cancer therapeutics. The CSO leads all research functions, oversees preclinical and translational programs, supervises the Chief Medical Officer, and ensures alignment with clinical and regulatory development goals. The CSO provides scientific leadership to internal teams and external partners, supports fundraising and business development, and serves as a key member of executive management.

In conjunction with such resignation, the stock option that Mr. van der Baan was previously granted on September 26, 2023 to acquire 250,000 shares of common stock was deemed fully vested effective with Mr. van der Baan's resignation as described herein, and the time period for Mr. van der Baan to exercise his stock option at any time in the future that he is no longer providing his services to the Company as a consultant, employee or otherwise was increased from ninety (90) days to one (1) year.

Except for the previously described changes in Mr. van der Baan's management duties and the modifications to the terms of the stock option, Mr. van der Baan's three (3) year employment agreement dated September 26, 2023 will remain in full force and effect.

If the Company does not complete a successful financing that enables it to maintain its listing on the Nasdaq Small Cap Market by July 3, 2025, the amendment to Mr. van der Baan's employment agreement as described herein will be automatically terminated retroactive to the amendment date and Mr. van der Baan will be reinstated as Chairman of the Board of Directors and Chief Executive Officer.

Geordan Pursglove. Effective June 16, 2025, Geordan Pursglove was appointed as our new Chairman of the Board of Directors and Chief Executive Officer. His responsibilities include the oversight of our business operations and strategic planning, and he will be the primary contact between our executive team and the Board of Directors. He will also be the principal spokesperson of the Company and have final say on all corporate matters, subject only to the authority of the Board of Directors.

We have entered into an employment agreement with Mr. Pursglove for a term of three (3) years effective June 16, 2025. Mr. Pursglove will receive an annual salary of \$240,000, which may be increased from time to time in the sole discretion of the Board of Directors. At his election, his compensation will be payable in cash and/or restricted shares, or a combination thereof. He is also eligible to receive an annual bonus as determined in the sole discretion of the Board of Directors in the form of cash or equity, or a combination thereof. Mr. Pursglove will not receive any additional compensation for serving as the Chairman of the Board of Directors of the Company.

Effective as of the end of the first trading day for the Company's common stock immediately following the consummation of this offering, which was July 3, 2025, as an inducement for Mr. Pursglove to join our Company, as a signing bonus, he was granted a stock option to purchase 350,000 shares of our common stock at an exercise price equal to the closing price on the Nasdaq Stock Market on such date of \$2.83 per share, which is exercisable for a term of five (5) years, provides for cashless exercise, and will vest 50% on the grant date, 25% on September 30, 2025, and 25% on December 31, 2025, subject to continued service.

The stock option grant was not issued under the Company's 2020 Stock Incentive Plan. The stock option agreement provided for certain registration rights (including on Form S-8) and for accelerated vesting upon the occurrence of certain events, including early termination of the employment agreement that is not the result of the voluntary termination, gross negligence or willful misconduct of Mr. Pursglove, a sale or change in control of the Company, or a sale, licensing or other disposition of all or substantially all of the assets of the Company, as defined in such stock option agreement.

If the Company does not complete a successful financing that enables it to maintain its listing on the Nasdaq Capital Market by July 3, 2025, the employment agreement with Mr. Pursglove as described herein will be deemed automatically terminated retroactively as of June 16, 2025 and the stock option grant will be cancelled, and Mr. Pursglove will promptly resign from the Board of Directors. In such event, Mr. van der Baan will be reinstated as Chairman of the Board of Directors and Chief Executive Officer.

Prior to joining the Company, Mr. Pursglove served as President, Chief Executive Officer and Chairman of the Board of Directors at Beyond Commerce, Inc. He was also President of Service 800, Inc., a leading phone and online customer satisfaction survey service that provides the most actionable customer feedback, to the most recognizable Fortune 500 companies globally, in which he led operations, scaled revenue, and oversaw the company's strategic vision. Mr. Pursglove held a board position at SemiCab Holdings, an emerging leader in the global logistics and distribution industry that was part of Algorhythm Holdings (NASDAQ: RIME). Currently Mr. Pursglove serves as the managing director of The 2GP Group LLC. During his time as the Managing Director of The 2GP Group, Mr. Pursglove has built multiple businesses in Sports, Sales, Marketing and Logistics. Mr. Pursglove has over a decade of experience in M&A, public markets space, capital raising, funding, growth, scaling businesses and driving innovation.

THE OFFERING

<i>Issuer:</i>	Lixte Biotechnology Holdings, Inc.
<i>Common Stock offered by the selling stockholders:</i>	Up to 12,626,054 shares of common stock consisting of (i) 59,552 Common Shares; (ii) 2,322,532 Pre-Funded Warrant Shares; (iii) 6,355,214 July 2025 Warrant Shares; (iv) 3,573,130 Conversion Shares; and (v) 315,626 July 2025 Placement Agent Shares.
<i>Common stock outstanding immediately prior to this offering:</i>	3,027,188 shares of common stock. ⁽¹⁾
<i>Use of proceeds:</i>	We will not receive any proceeds from any sale of the shares by the Selling Stockholders. We may receive proceeds from any exercise for cash of the July 2025 Warrants. See "Use of Proceeds".
<i>Nasdaq Capital Market trading symbol:</i>	Our common stock currently trades on the Nasdaq Capital Market under the symbol "LIXT".
<i>Transfer agent and registrar:</i>	The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.
<i>Risk factors:</i>	The securities offered by this prospectus are speculative and involve a high degree of risk. Investors purchasing securities should not purchase the securities unless they can afford the loss of their entire investment. See "Risk Factors".

(1) The number of shares of our Common Stock to be outstanding after this offering as shown above is based on 2,684,074 shares of Common Stock outstanding at March 31, 2025, after giving effect to the subsequent conversion of the Series A Convertible Preferred Stock into 72,917 shares of Common Stock in May 2025, the issuance and sale of 59,522 shares of Common Stock in the July 2025 private placement, and 210,675 shares of Common Stock in the July 2025 registered direct offering, and excludes:

- 744,726 shares of common stock issuable upon the exercise of common stock options issued to members of management, consultants and directors at a weighted average exercise price of \$10.347 per share;
- 1,275,758 shares of common stock issuable upon exercise of outstanding common stock warrants at an average exercise price of \$11.254 per share of common stock, including 434,784 shares of common stock issuable upon exercise of 434,784 common stock warrants exercisable at \$2.29 per share issued in our February 13, 2025 offering, 32,609 shares of common stock issuable upon exercise of 32,609 common stock warrants exercisable at \$3.1088 per share issued to the placement agent in our February 13, 2025 offering, and 149,700 shares of common stock issuable upon exercise of 149,700 publicly traded warrants at \$57.00 per share of common stock through November 30, 2025;
- 50,691 shares of common stock reserved for future grants pursuant to our 2020 Stock Incentive Plan, as amended (the "2020 Plan");
- 350,000 shares of common stock issuable upon exercise of common stock options issued to the Company's Chief Executive Officer upon the completion of the July 2, 2025 private placement at an exercise price of \$2.83 per common share; and
- 763,351 shares of common stock issuable upon the exercise of Pre-Funded Warrants issued in the July 2025 registered direct offering.

Unless otherwise indicated, all information in this prospectus assumes no exercises of the Pre-Funded Warrants offered and sold and no exercise of outstanding options or warrants.

RISK FACTORS

Investing in our common stock is highly speculative and involves a significant degree of risk. You should carefully consider the following risks and uncertainties as well as the risks and uncertainties described in the section entitled "Risk Factors" contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 and in our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2025, filed with the Securities and Exchange Commission, which filings are incorporated in this prospectus by reference in their entirety, as well as in any prospectus supplement hereto. These risk factors could materially and adversely affect our business, results of operations or financial condition. Our business faces significant risks and the risks described below or incorporated by reference herein may not be the only risks we face. Additional risks not presently known to us or that we currently believe are immaterial may materially affect our business, results of operations, or financial condition. If any of these risks occur, the trading price of our common stock could decline and you may lose all or part of your investment.

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

A clinical trial hold due to serious adverse events could delay or halt the development of our product candidate.

Our lead drug candidate, LB-100, is currently undergoing various clinical trials, and there is a risk that one or more of these trials could be placed on hold by regulatory authorities due to serious adverse events (SAEs) related to our drug candidate or to another company's drug used in combination in one of our clinical trials. It is possible that the SAEs could be attributable to our drug candidate and could include, but not be limited to, unexpected severe side effects, treatment-related deaths, or long-term health complications. A dose given could result in non-tolerable adverse events defined as dose-limiting toxicity (DLT). When two DLTs occur at the same dose-level that dose-level is considered too high and unsafe. Further treatment is only allowed at lower dose-levels that have previously been found safe.

If an SAE or a pattern of SAEs is observed during the course of a clinical trial involving our drug candidate, the U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA), or other regulatory authorities may issue a clinical hold, requiring us to pause or discontinue further enrollment and dosing in our clinical trial. It is also possible that the clinical trial could be terminated. Any of these actions could delay or halt the development of our drug candidate, increase development costs, and negatively impact our ability to ultimately achieve regulatory approval. Additionally, if an SAE is confirmed to be drug-related, we may be required to conduct additional studies, modify the study design, or abandon further development of the drug candidate altogether, which could materially impact our business, financial condition, and prospects.

The occurrence of an SAE and any resulting clinical hold could also harm our reputation with patients, physicians, health institutions, and investors, diminish our ability to attract clinical trial participants, and damage our ability to interest investors and obtain financing in the future. There can be no assurances that we will not experience such SAEs in the future or that any related clinical hold will be lifted in a timely manner, or at all.

The principal investigator of the colorectal study testing LB-100 in combination with atezolizumab (Roche PD-L1 inhibitor) is currently investigating two SAEs observed in the clinical trial that was launched in August 2024. The Institutional Review Board (the "IRB") of the Netherlands Cancer Institute ("NKI") has put the colorectal cancer study on hold. The adverse reactions that developed in the two patients were dyspnea (shortness of breath) due to lung toxicity possibly or probably related to the combination of LB-100 and atezolizumab in one patient and fever and aphasia possibly or probably related to the combination of LB-100 and atezolizumab in the second patient. The patient who developed lung toxicity deceased due to the combination of lung metastases of colorectal cancer and dyspnea. The patient with fever and aphasia fully recovered from the adverse events with supportive medication.

Given the identified adverse events in the two patients in the clinical trial, the IRB requested from the principal investigator of the study at the NKI information as to whether the adverse events could have been caused by the combination of LB-100 and atezolizumab and information about the mode of action of the combination of LB-100 and atezolizumab. The principal investigator prepared a response to the IRB detailing the safety experience with LB-100 given alone and in combination with other cancer drugs, especially doxorubicin and dostarlimab. Doxorubicin is a well-known chemotherapy, and dostarlimab is a well-known immunotherapy of which the mode of action is closely related to that of atezolizumab.

The reported adverse events in the colorectal cancer study have not been seen in any other patients thus far treated with LB-100 alone or in combination with other cancer drugs. Through early July 2025, the Company has been informed that a total of 82 patients had received or were receiving experimental treatment with LB-100.

In May 2025, the Company updated the safety overview of LB-100 and delivered the updated version 5.0 of the Investigator's Brochure (the "IB"), which contains all of the relevant preclinical, clinical and pharmacologic data with respect to the study of the LB-100 clinical compound in humans, to the investigators of all ongoing clinical trials. The investigators of the study in colorectal cancer (NCT06012734) submitted a detailed response to the IRB, including the updated IB. The Company is currently awaiting the outcome of the IRB review.

Risks Related to this Offering and Ownership of our Securities

We have a history of losses, expect to continue to incur losses in the near term and may not achieve or sustain profitability in the future, and as a result, our management has identified, and our auditors agreed that there is a substantial doubt about our ability to continue as a going concern.

We have incurred significant losses since our inception. We experienced net losses of \$3,585,965 and \$5,087,029 for the years ended December 31, 2024 and 2023, respectively, and \$709,555 and \$971,322 for the three months ended March 31, 2025 and 2024, respectively. We expect our operating losses will continue, or even increase, at least through the near term. You should not rely upon our past results as indicative of future performance. We will not reach profitability in the near future or at any specific time in the future.

The report of our independent registered public accounting firm that accompanies our audited consolidated financial statements in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 contains an explanatory paragraph regarding substantial doubt about our ability to continue as a going concern. Our consolidated financial statements do not include any adjustments that might result if we are unable to continue as a going concern. If we are unable to continue as a going concern, holders of our securities might lose their entire investment.

We are currently not in compliance with the Nasdaq Capital Market's continued listing requirements. If we are unable to regain compliance with the Nasdaq Capital Market's listing requirements, our securities could be delisted, which could affect our common stock's market price and liquidity and reduce our ability to raise capital.

On August 19, 2024, we received a letter from the Listing Qualifications Department (the "Staff") of the Nasdaq Stock Market LLC indicating that we were not in compliance with the minimum stockholders' equity requirement of \$2,500,000 for continued listing on the Nasdaq Capital Market under Listing Rule 5550(b) (the "Equity Rule").

On October 3, 2024, we submitted a plan to the Staff to regain compliance with the Equity Rule, which outlined our proposed initiatives to regain compliance by raising equity capital through various registered equity offerings.

On October 21, 2024, the Staff provided notice to us that it had granted an extension through February 18, 2025 to regain compliance with the Equity Rule.

As of February 18, 2025, we had not regained compliance with the Equity Rule. Accordingly, on February 19, 2025, we received a Staff determination letter from the Staff stating that we did not meet the terms of the extension because we did not complete our proposed financing initiatives to regain compliance. We timely requested a Hearing before a Nasdaq Hearings Panel (the "Panel"), which automatically stayed Nasdaq's suspension or delisting of our common stock and public warrants pending the Panel's decision.

On April 17, 2025, we received notice that the Panel had granted us an extension in which to regain compliance with all continued listing rules of the Nasdaq Capital Market. The Panel's determination followed a hearing on April 3, 2025, at which time the Panel considered our plan to regain compliance with the Equity Rule. As a result of the extension, the Panel granted our request for continued listing on the Nasdaq Capital Market, provided that we demonstrate compliance with the Equity Rule and all other continued listing requirements for the Nasdaq Capital Market by July 3, 2025.

In order for us to satisfy the decision of the Panel and to provide the working capital resources to fund our operations, (i) effective July 2, 2025, the Company completed a private placement of common stock units and preferred stock units for gross proceeds of \$5,050,000 and (ii) effective July 8, 2025, the Company completed a registered direct offering of common stock for gross proceeds of \$1,500,000. However, there can be no assurances that the Panel will deem the proceeds from these offerings as sufficient to comply with the Equity Rule and all other continued listing requirements for the Nasdaq Capital Market. Accordingly, even if we complete these offerings, there can be no assurances that we will be able to regain compliance and be able to maintain our listing on the Nasdaq Capital Market.

During the extension period, our common stock and public warrants will continue to trade on the Nasdaq Capital Market.

We cannot assure you that we will be able to regain compliance with the Nasdaq Capital Market's listing standards. Our failure to continue to meet these requirements would result in our common stock being delisted from Nasdaq, and if our common stock is delisted, the warrants issued in our public offering would also be delisted. We and holders of our securities could be materially adversely impacted if our securities are delisted from the Nasdaq Capital Market. In particular:

- we may be unable to raise equity capital on acceptable terms or at all;
- we may lose the confidence of our clinical partners, which would jeopardize our ability to continue our clinical trials as currently conducted;
- the price of our common stock will likely decrease as a result of the loss of market efficiencies associated with the Nasdaq Capital Market and the loss of federal pre-emption of state securities laws;
- holders may be unable to sell or purchase our securities when they wish to do so;
- we may become subject to stockholder litigation;
- we may be unable to attract, or we may lose the interest of, institutional investors in our common stock;
- we may lose media and analyst coverage;
- our common stock could be considered a "penny stock", which would likely limit the level of trading activity in the secondary market for our common stock; and
- we would likely lose any active trading market for our common stock, as it may only be traded on one of the over-the-counter markets, if at all.

If the Company does not regain compliance with Nasdaq's listing rules within the time period permitted by Nasdaq, then the Company's securities will be delisted from Nasdaq.

If the Company were to be delisted from Nasdaq, its common stock and warrants may be eligible for trading on an over-the-counter market. If the Company is not able to obtain a listing on another stock exchange or quotation service for its common stock and warrants, it may be extremely difficult or impossible for stockholders to sell their shares of common stock and warrants. Moreover, if the Company is delisted from Nasdaq, but obtains a substitute listing for its common stock and warrants, it will likely be on a market with less liquidity, and therefore experience potentially more price volatility than experienced on Nasdaq. Stockholders may not be able to sell their shares of common stock and warrants on any such substitute market in the quantities, at the times, or at the prices that could potentially be available on a more liquid trading market. As a result of these factors, if the Company's common stock is delisted from Nasdaq, the value and liquidity of the Company's common stock and warrants would likely be significantly adversely affected. A delisting of the Company's common stock from Nasdaq could also adversely affect the Company's ability to obtain financing for its operations and/or could result in a loss of confidence by investors, employees and/or business partners.

We will have to seek to raise additional funds to fund our operations, including the various clinical trials being currently conducted or will be conducted in the future. Depending on the terms available to us, if these fund raising activities result in significant dilution, they may negatively impact the trading price of our common stock.

Any additional financing that we secure may require the granting of rights, preferences or privileges senior to, *opari passu* with, those of our common stock. Any issuances by us of equity securities may be at or below the prevailing market price of our common stock and in any event may have a dilutive impact on your ownership interest, which could cause the market price of our common stock to decline. We may also raise additional funds through the incurrence of debt or the issuance or sale of other securities or instruments senior to our shares of common stock, which may be highly dilutive. The holders of any securities or instruments we may issue may have rights superior to the rights of our common stockholders. If we experience dilution from the issuance of additional securities and we grant superior rights to new securities over holders of our common stock, it may negatively impact the trading price of our common stock and you may lose all or part of your investment.

As part of the Company's ongoing process of evaluating various alternatives to obtain the capital required to fund its operations and maintain its listing on the Nasdaq Capital Market, management may decide to consider a wide variety of strategic alternatives, and there can be no assurances that any such transaction, if implemented, would enhance stockholder value, and could be highly dilutive to existing stockholders.

The Company is evaluating various alternatives to obtain the capital required to fund its operations and maintain its listing on the Nasdaq Capital Market, including merger or acquisition opportunities (including reverse mergers) and funding transactions involving a change in control. There can be no assurances that the evaluation process will result in the identification of an appropriate transaction, the negotiation and execution of a definitive agreement to effect such a transaction, or that any such transaction will ultimately be approved by the Company's stockholders and then be consummated. Depending on various factors, many of which are outside the control of the Company, our failure to enter into and consummate a strategic transaction could have a material adverse effect on our ability to continue to operate and finance our business, and on the market price of our common stock. Even if such a strategic transaction is consummated, there can be no assurances that it will enhance stockholder value, and it may result in substantial dilution to existing stockholders. Any potential transaction would be dependent on a number of factors that may be outside of our control, including, among other things, market conditions, industry trends, the interest of third parties in a potential transaction with the Company, and the availability of appropriate financing for such a transaction. If we are unable to raise the required capital to fund our operations, or to enter into a strategic transaction in the near future, we may not be able to maintain our listing on the Nasdaq Capital Market, and we may need to curtail or cease operations, which could result in a total loss of stockholders' investment.

The price of our common stock might fluctuate substantially.

You should consider an investment in our common stock to be risky. Some factors that might cause the market price of our common stock or public warrants to fluctuate, in addition to the other risks mentioned in this "Risk Factors" section, are:

- sale of our common stock by our stockholders, executives, and directors and our stockholders;
- volatility and limitations in trading volumes of our shares of common stock;
- our ability to obtain financings to conduct and complete research and development activities including, but not limited to, our clinical trials, and other business activities;
- the timing and success of introductions of new products by us or our competitors or any other change in the competitive dynamics of our industry, including consolidation among competitors, customers or strategic partners;
- network outages or security breaches;
- our ability to secure resources and the necessary personnel to conduct clinical trials on our desired schedule;
- commencement, enrollment or results of our clinical trials for our lead product candidate or any future clinical trials we might conduct;

- changes in the development status of our lead product candidate;
- any delays or adverse developments or perceived adverse developments with respect to the FDA’s review of our planned preclinical and clinical trials;
- any delay in our submission for studies or product approvals or adverse regulatory decisions, including failure to receive regulatory approval for our lead product candidate;
- unanticipated safety concerns related to the use of our lead product candidate;
- failures to meet external expectations or management guidance;
- changes in our capital structure or dividend policy, future issuances of securities, sales of large blocks of common stock by our stockholders;
- our cash position;

- announcements and events surrounding financing efforts, including debt and equity securities;
- our inability to enter into new markets or develop new products;
- reputational issues;
- competition from existing technologies and products or new technologies and products that might emerge;
- announcements of acquisitions, partnerships, collaborations, joint ventures, new products, capital commitments, or other events by us or our competitors;
- changes in general economic, political and market conditions in or any of the regions in which we conduct our business;
- changes in industry conditions or perceptions;
- changes in valuations of similar companies or groups of companies;
- analyst research reports, recommendations and changes in recommendations, price targets, and withdrawals of coverage;
- departures and additions of key personnel;
- disputes and litigations related to intellectual properties, proprietary rights, and contractual obligations;
- changes in applicable laws, rules, regulations, or accounting practices and other dynamics; and
- other events or factors, many of which might be out of our control.

In addition, if the market for stocks in our industry or industries related to our industry, or the stock market in general, experiences a loss of investor confidence, the trading price of our common stock could decline for reasons unrelated to our business, financial condition and results of operations. If any of the foregoing occurs, it could cause our stock price to fall and might expose us to lawsuits that, even if unsuccessful, could be costly to defend and a distraction to management.

Provisions of the Warrants issued in the July 2023 Financing, the February 2025 Financing and the July 2025 Private Placement could discourage an acquisition of us by a third party.

Certain provisions of the Warrants issued in our July 2023 Financing, the February 2025 Financing and the July 2025 Private Placement could make it more difficult or expensive for a third party to acquire us. Such Warrants contain a “fundamental transaction” provision that could require the surviving entity to assume our obligations under such Warrants. Furthermore, under certain circumstances, we may be required to redeem these Warrants for a cash payment calculated pursuant to the Black-Scholes option-pricing model. These provisions could prevent or deter a third party from acquiring us even where the acquisition could be beneficial to you.

There is no public market for the Pre-Funded Warrants.

There is no established public trading market for the Pre-Funded Warrants, and we do not expect a market to develop. In addition, we do not intend to apply to list the Pre-Funded Warrants on any securities exchange or nationally recognized trading system. Without an active market, the liquidity of the Pre-Funded Warrants will be limited.

Holders of our Pre-Funded Warrants will have no rights as holders of Common Stock until such warrants are exercised.

Until you acquire shares of Common Stock upon exercise of your Pre-funded Warrants, you will have no rights with respect to Common Stock issuable upon exercise of your Pre-Funded warrants. Upon exercise of your Pre-Funded Warrants, you will be entitled to exercise the rights of a holder of Common Stock only as to matters for which the record date occurs after the exercise date.

The Pre-Funded Warrants are speculative in nature.

The Pre-Funded Warrants do not confer any rights of ownership of our Common Stock on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire Common Stock at a fixed price. Specifically, commencing on the date of issuance, holders of the Pre-Funded Warrants may acquire Common Stock issuable upon exercise of such warrants at an exercise price of \$0.00001 per common share. Moreover, following this offering, the market value of the Pre-Funded Warrants is uncertain, and there can be no assurances that the market value of the Pre-Funded Warrants will equal or exceed their public offering price.

An active, liquid and orderly trading market for our common stock may not develop, the price of our stock may be volatile, and you could lose all or part of your investment.

Even though our common stock is currently listed on the Nasdaq Capital Market, we cannot predict the extent to which investor interest in our Company will lead to the development of an active trading market in our securities or how liquid that market might become. If such a market does not develop or is not sustained, it may be difficult for you to sell your shares of common stock at the time that you wish to sell them, at a price that is attractive to you, or at all. There could be extreme fluctuations in the price of our common stock if there are a limited number of shares in our public float.

The trading price of our common stock may be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. Our stock price could be subject to wide fluctuations in response to a variety of factors, which include:

- whether we achieve our anticipated corporate objectives;
- actual or anticipated fluctuations in our quarterly or annual operating results;
- changes in our financial or operational estimates;
- our ability to implement our operational plans;
- changes in the economic performance or market valuations of companies similar to ours; and
- general economic or political conditions in the United States or elsewhere.

In addition, broad market and industry factors may seriously affect the market price of companies' stock, including ours, regardless of actual operating performance. In the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. This litigation, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources.

If our shares of common stock become subject to the penny stock rules, it would become more difficult to trade our shares.

The Securities and Exchange Commission has adopted rules that regulate broker-dealer practices in connection with transactions in penny stocks. Penny stocks are generally equity securities with a price of less than \$5.00, other than securities registered on certain national securities exchanges or authorized for quotation on certain automated quotation systems, provided that current price and volume information with respect to transactions in such securities is provided by the exchange or system. If we do not retain a listing on the Nasdaq Capital Market and if the price of our common stock is less than \$5.00, our common stock will be deemed a penny stock. The penny stock rules require a broker-dealer, before a transaction in a penny stock not otherwise exempt from those rules, to deliver a standardized risk disclosure document containing specified information. In addition, the penny stock rules require that before effecting any transaction in a penny stock not otherwise exempt from those rules, a broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive (i) the purchaser's written acknowledgment of the receipt of a risk disclosure statement; (ii) a written agreement to transactions involving penny stocks; and (iii) a signed and dated copy of a written suitability statement. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for our common stock, and therefore stockholders may have difficulty selling their shares.

If we were to dissolve, the holders of our securities may lose all or substantial amounts of their investments.

If we were to dissolve as a corporation, as part of ceasing to do business or otherwise, we will be required to pay all amounts owed to any creditors before distributing any assets to holders of our capital stock. There is a risk that in the event of such a dissolution, there will be insufficient funds to repay amounts owed to holders of any of our indebtedness and insufficient assets to distribute to our capital stockholders, in which case investors could lose their entire investment.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business or our market, or if they change their recommendations regarding our securities adversely, our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts may publish about us, our business, our market or our competitors. If any of the analysts who may cover us change their recommendation regarding our common stock adversely, or provide more favorable relative recommendations about our competitors, our stock price would likely decline. If any of the analysts who may cover us were to cease coverage of our Company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

In making your investment decision, you should understand that we have not authorized any other party to provide you with information concerning us or this offering.

You should carefully evaluate all of the information in this prospectus before investing in our company. We may receive media coverage regarding our company, including coverage that is not directly attributable to statements made by our officers, that incorrectly reports on statements made by our officers or employees, or that is misleading as a result of omitting information provided by us, our officers or employees. We and the Placement Agent have not authorized any other party to provide you with information concerning us or this offering, and you should not rely on unauthorized information in making an investment decision.

The sales of the Shares could depress the market price of our shares of common stock and/or increase the volatility of our trading.

A substantial number of shares of common stock are being offered by this prospectus. Sales of a substantial number of our shares of common stock in the public markets pursuant to the terms of this offering 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. Additionally, such sales could also greatly increase the volatility associated with the trading of our common stock. We cannot predict the number of shares that might be sold, nor the effect future sales of shares would have on the market price of our shares.

A possible "short squeeze" due to a sudden increase in demand of our shares of common stock that largely exceeds supply may lead to price volatility in our shares of common stock.

Following this offering, investors may purchase our shares of common stock to hedge existing exposure in our shares of common stock or to speculate on the price of our shares of common stock. Speculation on the price of our shares of common stock may involve long and short exposures. To the extent aggregate short exposure exceeds the number of shares of our common stock available for purchase in the open market, investors with short exposure may have to pay a premium to repurchase our shares of common stock for delivery to lenders of our shares of common stock. Those repurchases may in turn, dramatically increase the price of our shares of common stock until investors with short exposure are able to purchase additional shares of common stock to cover their short position. This is often referred to as a "short squeeze". A short squeeze could lead to volatile price movements in our shares of common stock that are not directly correlated to the performance or prospects of our company and once investors purchase the shares of common stock necessary to cover their short position the price of our common stock may decline.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, and the documents incorporated by reference herein may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy and plans and our objectives for future operations, are forward-looking statements. The words "anticipate", "believe", "could", "estimate", "expect", "forecast", "intend", "may", "plan", "potential",

“should”, “will”, “would”, “might”, and similar expressions are intended to identify forward-looking statements. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from historical results or anticipated results, including:

- We are engaged in early-stage research and as such might not be successful in our efforts to develop a portfolio of commercially viable products;
- We have incurred substantial losses since our inception and anticipate that we will continue to incur substantial and increasing losses for the foreseeable future;
- Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern;
- We need significant additional financing to fund our operations and complete the development and, if approved, the commercialization of our lead product candidate, LB-100. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts;
- We currently have no source of revenues. We might never generate revenues or achieve profitability;
- Our ability to use net operating losses to offset future taxable income might be subject to limitations;
- Clinical-stage biopharmaceutical companies with product candidates in clinical development face a wide range of challenging activities which might entail substantial risk;
- We might find it difficult to enroll patients in our clinical trials which could delay or prevent the start of clinical trials for our product candidate;
- The results of preclinical studies or earlier clinical trials are not necessarily predictive of future results. Our lead product candidate in clinical trials, and any other product candidates that might advance into clinical trials, might not have favorable results in later clinical trials or receive regulatory approval;
- Clinical drug development involves a lengthy and expensive process with an uncertain outcome;
- There is a risk that one or more of our clinical trials could be placed on hold by regulatory authorities due to serious adverse events (SAEs) related to our drug candidate or to another company’s drug used in combination in one of our clinical trials. It is possible that the SAEs could be attributable to our drug candidate and could include, but not be limited to, unexpected severe side effects, treatment-related deaths, or long-term health complications. A dose given could result in non-tolerable adverse events defined as dose-limiting toxicity (DLT). When two DLTs occur at the same dose-level that dose-level is considered too high and unsafe. Further treatment is only allowed at lower dose-levels that have previously been found safe.

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- Risks associated with operating in foreign countries could materially adversely affect our product development;
- Our current and future product candidates, the methods used to deliver them or their dosage levels may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label or result in significant negative consequences following any regulatory approval;
- Our product development program might not uncover all possible adverse events that patients who take our lead product candidate may experience. The number of subjects exposed to our lead product candidate and the average exposure time in the clinical development program might be inadequate to detect rare adverse events or chance findings that might only be detected once the product is administered to more patients and for greater periods of time;
- Our future success is dependent on the regulatory approval of our lead product candidate;
- Our lead product candidate and future product candidates could fail to receive regulatory approval from the FDA;
- Failure to obtain regulatory approval in international jurisdictions would prevent our lead product candidate from being marketed abroad;
- Even if our current primary product candidate receives regulatory approval, it might still face future development and regulatory difficulties;
- We depend on certain key scientific personnel for our success who do not work full time for us. The loss of any such personnel could adversely affect our business, financial condition and results of operations;
- We expect to rely heavily on third parties for the conduct of clinical trials of our product candidates. If these clinical trials are not successful, or if we or our collaborators are not able to obtain the necessary regulatory approvals, we will not be able to commercialize our product candidates;
- Business interruptions could adversely affect future operations, revenues, and financial conditions, and might increase our costs and expenses;
- Our failure to find third party collaborators to assist or share in the costs of product development could materially harm our business, financial condition or results of operations;
- We might be subject to claims by third parties asserting that our employees, consultants, collaborators contractors or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property;
- We cannot be certain we will be able to obtain patent protection to protect our product candidates and technology;
- If we do not obtain patent term extension in the United States under the Hatch-Waxman Act or in foreign countries under similar legislation, our business might be materially harmed;
- If we fail to comply with our obligations in agreements under which we have licensed or, might license, intellectual property rights from third parties, or if we otherwise experience disruptions to our business relationships with our licensors, we could lose rights that are important to our business;
- We might infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing our product candidates;
- We might be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed alleged trade secrets of one or more third parties;
- Our intellectual property might not be sufficient to protect our intended products from competition, which might negatively affect our business as well as limit our partnership or acquisition appeal;
- If we are not able to protect and control our unpatented trade secrets, know-how and other technological innovation, we might suffer competitive harm;

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- We might incur substantial costs prosecuting our patent applications, maintaining our patents and patent applications, enforcing our patents, defending against third party patent infringement suits, seeking invalidation of third party patents or in-licensing third party intellectual property, as a result of litigation or other proceedings relating to patent and other intellectual property rights;
- If we are unable to protect our intellectual property rights, our competitors might develop and market products with similar or identical features that might reduce demand for our potential products;
- Our commercial success depends upon attaining significant market acceptance of our current product candidate and future product candidates, if approved, among physicians, patients, healthcare payors and cancer treatment centers;
- Even if we are able to commercialize our lead product candidate or any future product candidates, the products might not receive coverage or adequate reimbursement from third party payors in the United States and in other countries in which we seek to commercialize our intended products, which could harm our business;
- Healthcare legislative measures aimed at reducing healthcare costs might have a material adverse effect on our business and results of operations;
- Price controls might be imposed in foreign markets, which might adversely affect our future profitability;
- Our relationships with customers and third party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings. If we or they are unable to comply with these provisions, we might become subject to civil and criminal investigations and proceedings that could have a material adverse effect on our business, financial condition and prospects;

- Our employees might engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could cause significant liability for us and harm our reputation;
- Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we might develop;
- We face substantial competition, which might result in others discovering, developing or commercializing products before or more successfully than we do;
- Significant disruptions of information technology systems, computer system failures or breaches of information and cyber security could adversely affect our business;
- We might need to grow the size of our organization in the future, and we might experience difficulties in managing this growth;
- Inadequate funding for the FDA, the SEC and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business might rely, which could negatively impact our business;
- Unstable market and economic conditions and adverse developments with respect to financial institutions and associated liquidity risk may have serious adverse consequences on our business, financial condition and stock price;
- We are a “smaller reporting company” and we have elected to comply with certain reduced reporting and disclosure requirements which could make its common stock less attractive to investors;
- The price of our common stock might fluctuate substantially;
- A sale or perceived sale of a substantial number of shares of our common stock might cause the price of our common stock to decline;
- Market and economic conditions might negatively impact our business, financial condition and share price;
- If securities or industry analysts do not publish research or reports, or publish unfavorable research or reports about our business, our stock price and trading volume might decline;
- Future sales and issuances of our common stock could result in additional dilution of the percentage ownership of our stockholders and could cause our share price to fall;
- We do not intend to pay cash dividends on our shares of common stock so any returns will be limited to the value of our shares;

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- We might be at risk of securities class action litigation;
- Our Certificate of Incorporation and our Amended and Restated Bylaws, and Delaware law might have anti-takeover effects that could discourage, delay or prevent a change in control, which might cause our stock price to decline;
- Financial reporting obligations of being a public company in the United States are expensive and time-consuming, and our management will be required to devote substantial time to compliance matters; and
- If we fail to comply with the rules under Sarbanes-Oxley related to accounting controls and procedures in the future, or, if we discover material weaknesses and other deficiencies in our internal control and accounting procedures, our stock price could decline significantly and raising capital could be more difficult.
- We may not be able to maintain compliance with the continued listing requirements of the Nasdaq Capital Market.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this prospectus. We have based these forward-looking statements largely on our current expectations about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in “Risk Factors”. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the Securities and Exchange Commission as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

USE OF PROCEEDS

All of the Common Shares offered by the Selling Stockholders pursuant to this prospectus will be sold by the Selling Stockholders for their respective accounts.

We will not receive additional proceeds from any such sales.

A portion of the Common Shares covered by this prospectus are issuable upon exercise of the July 2025 Warrants issued to the Selling Stockholders. The initial exercise price of the outstanding July 2025 Warrants is \$1.00 per share. Upon any cash exercise of outstanding July 2025 Warrants, the applicable selling stockholders will pay us the exercise price. To the extent we receive proceeds from the cash exercise of outstanding Common Stock Warrants, we intend to use the proceeds for working capital and for other general corporate purposes.

The selling stockholders will pay any discounts, commissions, fees of underwriters, selling brokers, dealer managers or similar securities industry professionals and expenses incurred by the Selling Stockholders for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholders in disposing of the shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the Common Shares covered by this prospectus, including, without limitation, filing and printing fees, listing fees, and fees and expenses of our counsel and our accountants.

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CAPITALIZATION

- on an actual basis;
- on an as adjusted basis, to reflect the conversion of 350,000 shares of Series A Convertible Preferred Stock outstanding at a conversion rate of 0.2083 common shares per preferred share, reflecting a conversion price of \$48.00 per common share, into 72,917 shares of common stock pursuant to a notice of conversion dated May 16, 2025; and
- on an as further adjusted basis, to reflect:

-- the issuance and sale of 2,382,084 common stock units in the July 2025 private placement at the aggregate offering price of \$0.8396 per unit, each unit consisting of one share of common stock at a price of \$0.7146 and one common stock warrant at a price of \$0.125 to acquire one share of common stock at an exercise price of \$1.00 per share, after deducting placement agent fees and estimated offering expenses and the receipt of the proceeds of such sale;

-- the issuance and sale of 3,573,130 preferred stock units in the July 2025 private placement at the aggregate offering price of \$0.8396 per unit, each unit consisting of one share of preferred stock at a price of \$0.7146 and one common stock warrant at a price of \$0.125 to acquire one share of common stock at an exercise price of \$1.00 per share, after deducting placement agent fees and estimated offering expenses and the receipt of the proceeds of such sale;

- on an as final adjusted basis, to reflect:

-- the issuance and sale of 210,675 shares of common stock and 763,351 shares of common stock issuable upon exercise of pre-funded warrants acquired in the July 2025 Registered Direct Offering at an aggregate offering price of \$1.54 per share, after deducting placement agent fees and estimated offering expenses and the receipt of the proceeds of such sale.

	As of March 31, 2025			
	Actual (unaudited)	As Adjusted (unaudited)	As Further Adjusted (unaudited)	As Final Adjusted (unaudited)
Cash	\$ 1,384,697	\$ 1,384,697	\$ 5,544,695	\$ 6,824,696
Stockholders' equity:				
Preferred stock, \$0.0001 par value per share, 10,000,000 shares authorized:				
Series A – 350,000 shares issued and outstanding	\$ 3,500,000	—	—	—
Series B – 3,573,130 shares issued and outstanding	—	—	3,000,000	3,000,000
Common stock, \$0.0001 par value per share; 100,000,000 shares authorized, 2,684,074 issued and outstanding shares actual, 2,756,991 shares on an as adjusted basis, 5,139,075 shares on an as further adjusted basis, and 6,113,101 shares on an as final adjusted basis	268	275	514	611
Additional paid-in capital	50,436,110	53,936,103	55,095,862	56,375,766
Accumulated deficit	(52,777,248)	(52,777,248)	(52,777,248)	(52,777,248)
Total stockholders' equity	\$ 1,159,130	\$ 1,159,130	\$ 5,319,128	\$ 6,599,129
Total capitalization	\$ 1,159,130	\$ 1,159,130	\$ 5,319,128	\$ 6,599,129

- 744,726 shares of common stock issuable upon the exercise of common stock options issued to members of management, consultants, and directors at a weighted average exercise price of \$10.347 per share;
- 1,275,758 shares of common stock issuable upon exercise of outstanding common stock warrants at an average exercise price of \$11.254 per share of common stock, including 434,784 shares of common stock issuable upon exercise of 434,784 common stock warrants exercisable at \$2.29 per share issued in our February 13, 2025 offering, 32,609 shares of common stock issuable upon exercise of 32,609 common stock warrants exercisable at \$3.1088 per share issued to the placement agent in our February 13, 2025 offering, and 149,700 shares of common stock issuable upon exercise of 149,700 publicly traded warrants at \$57.00 per share of common stock through November 30, 2025;
- 50,691 shares of common stock reserved for future grants pursuant to our 2020 Stock Incentive Plan, as amended (the “2020 Plan”);
- 6,355,214 shares of common stock issuable upon exercise of common stock warrants at an exercise price of \$1.00 per common share issued to investors in this offering;
- 315,626 shares of common stock issuable upon exercise of common stock warrants at an exercise price of \$1.25 per common share issued to the Placement Agent in this offering;
- 350,000 shares of common stock issuable upon exercise of common stock options issued to the Company’s Chief Executive Officer upon the completion of this offering at an exercise price of \$2.83 per common share; and
- 3,573,130 shares of common stock issuable upon conversion of Series B Preferred Stock issued in connection with this offering.

SELECTED HISTORICAL FINANCIAL DATA

Consolidated Statements of Operations Data

	Three Months Ended March 31,	
	2025	2024
Revenues	\$ —	\$ —
Costs and expenses:		
Research and development costs	91,457	119,064
General and administrative costs	615,483	847,815
Total costs and expenses	706,940	966,879
Loss from operations	(706,940)	(966,879)
Interest income	441	2,859
Interest expense	(3,135)	(7,186)
Foreign currency gain (loss)	79	(116)
Net loss	\$ (709,555)	\$ (971,322)
Net loss per share of common stock – basic and diluted	\$ (0.29)	\$ (0.43)
Weighted average shares of common stock outstanding – basic and diluted	2,471,513	2,249,290

Consolidated Balance Sheet Data

March 31,

	2025	2024
Total current assets	\$ 1,514,228	\$ 3,589,203
Total assets	\$ 1,514,228	\$ 3,589,203
Total current liabilities	\$ 355,098	\$ 462,836
Total liabilities	\$ 355,098	\$ 462,836
Stockholders' equity:		
Preferred Stock, \$0.0001 par value; authorized – 10,000,000 shares; issued and outstanding – 350,000 shares of Series A Convertible Preferred Stock, \$10.00 per share stated value, liquidation preference based on assumed conversion into common stock – 72,917 shares at March 31, 2025 and 2024	\$ 3,500,000	\$ 3,500,000
Common stock, \$0.0001 par value; authorized – 100,000,000 shares; issued and outstanding – 2,684,074 shares and 2,249,290 shares at March 31, 2025 and 2024, respectively	268	225
Additional paid-in capital	50,436,110	49,079,192
Accumulated deficit	(52,777,248)	(49,453,050)
Total stockholders' equity	\$ 1,159,130	\$ 3,126,367

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Consolidated Statements of Operations Data

	Years Ended December 31,	
	2024	2023
Revenues	\$ —	\$ —
Costs and expenses:		
Research and development costs	726,232	898,100
General and administrative costs	2,846,557	4,192,136
Total costs and expenses	3,572,789	5,090,236
Loss from operations	(3,572,789)	(5,090,236)
Interest income	7,048	17,486
Interest expense	(16,821)	(16,233)
Foreign currency gain (loss)	(3,403)	1,954
Net loss	\$ (3,585,965)	\$ (5,087,029)
Net loss per share of common stock – basic and diluted	\$ (1.59)	\$ (2.66)
Weighted average shares of common stock outstanding – basic and diluted	2,249,290	1,915,838

Consolidated Balance Sheet Data

	December 31,	
	2024	2023
Total current assets	\$ 1,145,503	\$ 4,308,620
Total assets	\$ 1,145,503	\$ 4,308,620
Total current liabilities	\$ 318,824	\$ 313,858
Total liabilities	\$ 318,824	\$ 313,858
Stockholders' equity:		
Preferred Stock, \$0.0001 par value; authorized – 10,000,000 shares; issued and outstanding – 350,000 shares of Series A Convertible Preferred Stock, \$10.00 per share stated value, liquidation preference based on assumed conversion into common stock – 72,917 shares	\$ 3,500,000	\$ 3,500,000
Common stock, \$0.0001 par value; authorized – 100,000,000 shares; issued and outstanding – 2,249,290 shares at December 31, 2024 and 2023, respectively	225	225
Additional paid-in capital	49,394,687	48,976,265
Accumulated deficit	(52,067,693)	(48,481,728)
Total stockholders' equity	\$ 827,219	\$ 3,994,762

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DESCRIPTION OF SECURITIES

General

Our certificate of incorporation, as amended, authorizes the issuance of up to 100,000,000 shares of common stock, par value \$0.0001 per share, and up to 10,000,000 shares of preferred stock, par value \$0.0001 per share.

As of March 31, 2025, there were 2,684,074 shares of common stock outstanding, which were held by 46 stockholders of record, and 350,000 shares of Series A Convertible Preferred Stock outstanding, which were subsequently converted into 72,917 shares of common stock pursuant to a notice of conversion dated May 16, 2025.

On June 2, 2023, we effected a reverse stock split of our common stock at a ratio of 1-for-10. All share and per share information presented in this prospectus reflects the effect of the reverse stock split.

Common Stock

Each holder of common stock is entitled to one vote for each share of common stock held on all matters submitted to a vote of the stockholders, including the election of directors. Our certificate of incorporation, as amended and bylaws do not provide for cumulative voting rights.

Subject to preferences that may be applicable to any then outstanding preferred stock, the holders of our outstanding shares of common stock are entitled to receive dividends, if any, as may be declared from time to time by our Board of Directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Holders of our common stock have no pre-emptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that are outstanding or that we may designate and issue in the future.

Preferred Stock

Our Board of Directors is authorized, without vote or action by our stockholders, to issue from time to time up to an aggregate of 10,000,000 shares of preferred stock in one or more series and to fix or alter the designations, preferences, rights and any qualifications, limitations or restrictions of the shares of each of these series, including, if applicable, the dividend rights and preferences, conversion rights, voting rights, terms and rights of redemption, including without limitation sinking fund provisions, redemption price or prices, liquidation rights and preferences, and the number of shares constituting any series. The issuance of preferred stock may have the effect of delaying, deferring or preventing a change in control of us without further action by our stockholders and may adversely affect the dividend, liquidation and voting and other rights of the holders of common stock. The issuance of preferred stock with voting and conversion rights may adversely affect the voting power of the holders of common stock, including the loss of voting control to others.

We believe that the ability to issue preferred stock without the expense and delay of a special stockholders' meeting provides us with increased flexibility in structuring possible future financings and acquisitions, and in meeting other corporate needs that might arise. This also permits the Board of Directors of the Company to issue preferred stock containing terms which could impede the completion of a takeover attempt. This could discourage an acquisition attempt or other transaction which stockholders might believe to be in their best interests or in which they might receive a premium for their stock over the then market price of the stock.

In the July 2025 Private Placement, we issued an aggregate of 3,573,130 shares of the Company's Series B Preferred Stock (the "Series B Preferred Shares"). Holders of the Series B Preferred Shares are entitled to receive cumulative dividends at the rate of 8% per annum on the stated value of each share of the Preferred Stock. The stated value is \$0.7146 per share. The dividends will accrue daily, but will not compound, and will be payable upon conversion of the applicable shares of Series B Preferred Shares at the election of the holder, either in cash, or through the issuance of additional shares of common stock valued at the then-effective conversion price. The dividend will increase by an additional 2% per annum for each cumulative 90-day period during which a registration statement covering the resale of the underlying common shares is not effective. The Series B Preferred Shares will have no voting rights. However, as long as at least 50% of the Series B Preferred Shares are outstanding, we will not, without the affirmative vote of holders of at least a majority in Stated Value of the Series B Preferred Shares (a) change adversely the preferences of the Series B Preferred Shares, (b) create any class of stock senior to the Series B Preferred Shares, (c) amend any of its charter documents which adversely affects the rights of the holders of the Series B Preferred Shares, (d) increase the number of authorized shares of Series B Preferred Shares, (e) consummate any merger or sale of all or substantially all of the Company's assets or any other transaction that results in a change of control, or (f) authorize or issue any securities that are convertible into capital Stock at a price per share less than the original per share purchase price. So long as the holders hold any Series B Preferred Shares, the holder shall have a right to designate two members to the Company's Board of Directors. Each share of Series B Preferred Shares is convertible at an initial conversion price based upon one Series B Preferred Share for one share of Common Stock. The conversion price and number of shares to be issued upon conversion is subject to standard adjustments such as stock splits and stock dividends

Warrants

In connection with our July 2023 financing and February 2025 financing, we issued warrants to purchase a total of 1,085,727 shares to the investors and placement agents, including Warrants to purchase 583,334 shares of common stock exercisable at \$6.00 per share to the investor in the 2023 Financing and Warrants to purchase 434,784 shares of common stock exercisable at \$2.29 per share to the investors in the February 2025 Financing.

In connection with the July 2025 Private Placement, we issued to the investors common stock warrants to purchase a total of 6,355,214 shares of common stock at an exercise price of \$1.00 per share. We also issued to the placement agent warrants to purchase 315,626 shares of common stock at an exercise price of \$1.25 per share

The exercise prices of the Warrants are subject to customary adjustments for stock splits, stock dividends, stock combinations, reclassifications, reorganizations, or similar events affecting our common stock. In addition, the Warrants contain a "fundamental transaction" provision which provides that if any defined fundamental transactions are within our control and are consummated, the holder of the unexercised common stock Warrants would be entitled to receive, at its option, in exchange for extinguishment of such Warrants, cash consideration equal to a Black-Scholes valuation amount, as defined in the Warrant agreement. The fundamental transaction provision includes (i) a sale, lease, assignment, transfer, conveyance or other disposition of all or substantially all of assets in one or a series of related transactions, or (ii) a change in control of the Company by which it, directly or indirectly, in one or more related transactions, consummates a stock or share purchase agreement or other business combination with another person or group, whereby such other person or group acquires more than 50% of the voting power of our common equity.

If such fundamental transaction is not within our control, including not being approved by our Board of Directors, the Warrant holder would only be entitled to receive the same type or form of consideration (and in the same proportion) equal to the Black-Scholes valuation amount of the remaining unexercised portion of the Warrant on the date of consummation of such fundamental transaction as the holders of our common stock receive. Accordingly, these Warrants are classified as a component of permanent stockholders' equity. We will account for any cash payment for a Warrant redemption as a distribution from stockholders' equity, as and when a fundamental transaction is consummated and such cash payment is made.

Pre-Funded Warrants

In connection with the July 2025 Private Placement and the July 2025 Registered Direct Offering, we issued Pre-Funded Warrants to purchase shares of our common stock. Each Pre-Funded Warrant is exercisable for one share of our common stock, with an exercise price equal to \$0.00001 per share, at any time that the Pre-Funded Warrant is outstanding. There is no expiration date for the Pre-Funded Warrants. The holder of a Pre-Funded Warrant will not be deemed a holder of our underlying common stock until the Pre-Funded Warrant is exercised.

The exercise price and the number of shares of common stock issuable upon exercise of the Pre-Funded Warrants are subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, stock combinations, reclassifications, reorganizations or similar events affecting our common stock.

The term “pre-funded” refers to the fact that the purchase price of our common stock in this offering includes almost the entire exercise price that will be paid under the Pre-Funded Warrants, except for a nominal remaining exercise price of \$0.00001. The purpose of the Pre-Funded Warrants is to enable investors that may have restrictions on their ability to beneficially own more than 4.99% (or, upon election of the holder, 9.99%) of our outstanding common stock following the consummation of this offering the opportunity to make an investment in us without triggering their ownership restrictions, by receiving Pre-Funded Warrants in lieu of our common stock which would result in such ownership of more than 4.99% (or 9.99%), and receive the ability to exercise their option to purchase the shares underlying the Pre-Funded Warrants at such nominal price at a later date.

The Pre-Funded Warrants are exercisable, at the option of the holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of common stock purchased upon such exercise (except in the case of a cashless exercise, as discussed below). A holder (together with its affiliates) may not exercise any portion of the Pre-Funded Warrants to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding shares of common stock immediately after exercise. However, upon notice from the holder to us, the holder may decrease or increase the holder’s beneficial ownership limitation, which may not exceed 9.99% of the number of outstanding shares of common stock immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrants, provided that any increase in the beneficial ownership limitation will not take effect until sixty-one (61) days following notice to us. Purchasers 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 shares of common stock. No fractional shares 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 next whole share.

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

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

Exchange Listing.

There is no trading market available for the Pre-Funded Warrants on any securities exchange or nationally recognized trading system. Accordingly, we do not intend to list the Pre-Funded Warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder.

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

Fundamental Transaction.

In the event of a fundamental transaction, as described in the Pre-Funded Warrants and generally including any reorganization, recapitalization or reclassification of our shares of common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding shares of common stock, or any person or group becoming the beneficial owner of more than 50% of the voting power represented by our outstanding shares of common stock, the holders of the 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.

Anti-Takeover Effects of Certain Provisions in our Certificate and Bylaws

Exclusive Forum

The certificate of incorporation provides that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers, or other employee to us or to our stockholders, (iii) any action asserting a claim against us arising pursuant to any provision of the Delaware General Corporation Law, the certificate of incorporation or the bylaws or (iv) any action asserting a claim governed by the internal affairs doctrine. However, this provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act. In addition, the Court of Chancery of the State of Delaware and the federal district courts will have concurrent jurisdiction for the resolution of any suit brought to enforce any duty or liability created by the Securities Act. Notwithstanding the foregoing, the inclusion of such provisions in the certificate of incorporation will not be deemed to be a waiver by us or our stockholders of the obligation to comply with federal securities laws, rules and regulations.

Although we believe these provisions benefit the Company by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, these provisions may have the effect of discouraging lawsuits against the Company’s directors and officers. Furthermore, the enforceability of choice of forum provisions in other companies’ certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable.

Advance Notice of Stockholder Proposals and Nominations

Our bylaws include an advance notice procedure for stockholders to nominate candidates for election as directors or to bring other business before any meeting of our stockholders. The stockholder notice procedure provides that only persons who are nominated by, or at the direction of, the Board of Directors, or by a stockholder who has given timely written notice prior to the meeting at which directors are to be elected, will be eligible for election as directors and that, at a stockholders’ meeting, only such business may be conducted as has been brought before the meeting by, or at the direction of, the Board of Directors or by a stockholder who has given timely written notice of such stockholder’s intention to bring such business before such meeting.

Under the stockholder notice procedure, for notice of stockholder nominations or other business to be made at a stockholders’ meeting to be timely, such notice must be received by us not earlier than the close of business on the 120th calendar day and not later than the close of business on the 90th calendar day prior to the one-year anniversary of the immediately preceding year’s annual meeting or as otherwise provided in the bylaws.

A stockholder’s notice to us proposing to nominate a person for election as a director or proposing other business must contain certain information specified in the bylaws, including the identity and address of the nominating stockholder, a representation that the stockholder is a record holder of our stock entitled to vote at the meeting and information regarding each proposed nominee or each proposed matter of business that would be required under the federal securities laws to be included in a proxy statement soliciting proxies for the proposed nominee or the proposed matter of business.

The stockholder notice procedure may have the effect of precluding a contest for the election of directors or the consideration of stockholder proposals if the proper procedures are not followed, and of discouraging or deterring a third party from conducting a solicitation of proxies to elect its own slate of directors or to approve its own

proposal, without regard to whether consideration of such nominees or proposals might be harmful or beneficial to us and our stockholder.

Restrictions on Call of Special Meetings

Our bylaws provide that special meetings of stockholders can only be called by the Board of Directors, Chief Executive Officer or President (in the absence of a Chief Executive Officer), but not by our stockholders or any other person or persons.

No Cumulative Voting

The certificate of incorporation does not authorize cumulative voting for the election of directors.

Preferred Stock Authorization

Our Board of Directors, without stockholder approval, has the authority under our certificate of incorporation to issue preferred stock with rights superior to the rights of the holders of common stock. As a result, preferred stock, while not intended as a defensive measure against takeovers, could be issued quickly and easily, could adversely affect the rights of holders of common stock, and could be issued with terms calculated to delay or prevent a change of control of the Company or make removal of management more difficult.

SELLING STOCKHOLDERS

The common stock being offered by the selling stockholders consist of: (a) the Common Shares issued in the July 2025 Private Placement, (b) the exercise of the Pre-Funded Warrants, (c) the exercise of the July 2025 Warrants, (d) the Conversion of the Series B Preferred Shares, and (e) the exercise of the July 2025 Placement Agent Warrants. For additional information regarding the issuance of the Pre-Funded Warrants, the July 2025 Warrants, and the Series B Preferred Shares, see “July 2025 Private Placement” above. We are registering the shares of common stock in order to permit the selling stockholders to offer the shares for resale from time to time. None of the selling stockholders nor any persons who have control over the selling stockholders has had any material relationship with us within the past three years.

The table below lists the selling stockholders and other information regarding the beneficial ownership (as determined under Section 13(d) of the Exchange Act) of the shares of Common Stock by the selling stockholders. The second column lists the number of shares of Common Stock beneficially owned by the selling stockholders, based on their ownership of the shares of Common Stock and assuming exercise in full of the Pre-Funded Warrants, July 2025 Warrants and the conversion of the Series B Preferred Shares held by the selling stockholders on that date, without regard to any limitations on exercises. The third column lists the maximum number of shares of Common Stock that may be sold or otherwise disposed of by the selling stockholders pursuant to the registration statement of which this prospectus forms a part. The selling stockholders may sell or otherwise dispose of some, all or none of its shares. The fourth column assumes the sale of all of the shares of Common Stock offered by the selling stockholders pursuant to this prospectus, without regard to any limitations on exercises.

Under the terms of the Pre-Funded Warrants, the July 2025 Warrants and the Certificate of Designation for the Series B Preferred Shares, the selling stockholders may not exercise the Common Stock Warrants nor the conversion of the Series B Preferred Shares to the extent such exercise would cause the selling stockholders, together with their affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% or 9.99%, as applicable, of our then outstanding common stock following such exercise, excluding for purposes of such determination the shares of common stock issuable upon exercise of the outstanding Warrants which have not been exercised. The number of shares of common stock owned prior to the offering in the second column and the number of shares of common stock owned after the offering in the fourth column do not reflect this limitation. The selling stockholders may sell all, some or none of their shares in this offering. See “Plan of Distribution”.

Name and Address of Selling Stockholder	Number of Shares of Common Stock Owned Prior to Offering	Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus	Shares Owned Immediately After Sale of Maximum Number of Shares in this Offering	
			Number	Percentage of Outstanding Common Stock ⁽¹⁾
North York Ltd. 007 Emily House 1105 Leeward Highway Providenciales P.O. Box 666 Turks and Caicos Islands	—	9,013,720(2)	9,013,720	58.6%
Indigo Capital LP 89 Nexus Way Camana Bay Grand Cayman KY1-9009 Cayman Islands	—	357,312(3)	357,312	2.3%
Greenfield Investments LTD. P.O. Box 926, Suite A203 & 204 Regent Village East Grace Bay Providenciales Turks and Caicos Islands	—	1,191,042(4)	1,191,042	7.7%
Strategic EP LLC 1050 Crown Pointe Parkway Suite 500 Atlanta, Georgia 30338	—	1,391,042(5)	1,391,042	9.0%
Pamela Shier 9 Pembury Avenue Toronto, Ontario M4N 3K4 Canada	—	238,208(6)	238,208	1.6%

Fortaleza Digital Proprietary Trading LLC 1309 Coffen Avenue, Suite 1200 Sheridan, Wyoming 82801	—	119,104(7)	119,104	0.8%
Spartan Capital Securities, LLC 45 Broadway, 19 th Floor New York, New York 10006	—	315,626(8)	315,626	2.1%
Total	—	12,626,054	12,626,054	82.1%

(1) Percentages are based on 15,383,045 shares of Common Stock assumed to be outstanding after giving effect to the sale of all shares of Common Stock being sold for resale, and do not include 210,675 shares of Common Stock and 763,351 shares of Common Stock issuable upon exercise of Pre-Funded Warrants acquired in the July 2025 Registered Direct Offering that are owned by a selling stockholder (see “July 2025 Registered Direct Offering” above and Notes 3 and 5 below).

(2) Represents 833,730 common shares issuable upon exercise of the Pre-Funded Warrants, 3,573,130 common shares exercisable upon conversion of the Series B Preferred Shares, and 4,606,860 common shares issuable upon exercise of the Common Warrants. The July 2025 Warrants and the Series B Preferred Shares are subject to a beneficial ownership limitation of 4.99%, which limitation restricts the stockholder from exercising or converting that portion of the securities that would result in the stockholder, after exercise, in beneficially owning common shares in excess of the beneficial ownership limitation.

(3) Represents 178,656 common shares issuable upon the exercise of Pre-Funded Warrants and 178,656 shares issuable upon exercise of the Common Warrants. Does not include 140,000 shares of Common Stock and 509,351 shares of Common Stock issuable upon exercise of Pre-Funded Warrants acquired in the July 2025 Registered Direct Offering.

(4) Represents 595,521 shares issuable upon exercise of the Pre-Funded Warrants and 595,521 shares issuable upon exercise of the Common Warrants. The Common Warrants are subject to a beneficial ownership limitation of 4.99%, which limitation restricts the stockholder from exercising that portion of the securities that would result in the stockholder, after exercise, in beneficially owning common shares in excess of the beneficial ownership limitation.

(5) Represents 595,521 shares issuable upon exercise of the Pre-Funded Warrants and 795,521 shares issuable upon exercise of the Common Warrants. The Common Warrants are subject to a beneficial ownership limitation of 4.99%, which limitation restricts the stockholder from exercising that portion of the securities that would result in the stockholder, after exercise, in beneficially owning common shares in excess of the beneficial ownership limitation. Does not include 70,675 shares of Common Stock and 254,000 shares of Common Stock issuable upon exercise of Pre-Funded Warrants acquired in the July 2025 Registered Direct Offering.

(6) Represents 119,104 shares issuable upon exercise of the Pre-Funded Warrants and 119,104 shares issuable upon exercise of the Common Warrants.

(7) Represents 59,552 common shares and 59,552 shares issuable upon exercise of the Common Warrants.

(8) Represents 315,626 shares issuable upon exercise of the Placement Agent Common Warrants.

PLAN OF DISTRIBUTION

The selling stockholders and any of their pledges, assignees and successors-in-interest may from time to time, sell any or all of their shares of common stock covered hereby on The Nasdaq Capital Market or any other stock exchange, market or trading facility on which the common stock is traded or in private transactions. These sales may be at fixed or negotiated prices. The selling stockholders may use any one or more of the following methods when selling shares of common stock:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker-dealers that agree with the selling stockholder to sell a specified number of shares of common stock at a stipulated price per share;
- through the written settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares of common stock under Rule 144 or any other exemption from registration under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares of common stock, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with Rule 2121 of the Financial Industry Regulatory Authority, or FINRA; and in the case of a principal transaction, a markup or markdown in compliance with FINRA Rule 2121.

In connection with the sale of the shares of common stock covered by this prospectus or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of common stock short and deliver these shares to close out their short positions, or loan or pledge the shares to broker-dealers that in turn may sell these shares. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares of common stock covered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling stockholders and any broker-dealers or agents that are involved in selling the shares of common stock covered hereby may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each selling stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the shares of common stock.

We are required to pay certain fees and expenses incurred by us incident to the registration of the shares of common stock covered hereby. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to keep the registration statement of which this prospectus forms a part effective until the selling stockholders do not own any Common Shares, Pre-Funded Warrant Shares, Conversion Shares, July 2025 Warrant Shares and July 2025 Placement Agent Shares, or until all shares issued or issuable are freely tradeable pursuant to an applicable exemption. The shares of common stock will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the shares of common stock covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Securities Exchange Act of 1934, or the Exchange Act, any person engaged in the distribution of the shares of common stock covered hereby may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the selling stockholder or any other person. We will make copies of this prospectus available to the selling stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

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LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon by TroyGould PC, Los Angeles, California.

EXPERTS

Weinberg & Company, P.A., our independent, registered public accounting firm, has audited our consolidated financial statements as of December 31, 2024 and 2023 and for the years then ended included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, which is incorporated by reference into this prospectus and elsewhere in the registration statement of which this prospectus is a part. Our consolidated financial statements are incorporated by reference in reliance on Weinberg & Company P.A.'s report, which includes an explanatory paragraph regarding substantial doubt about the Company's ability to continue as a going concern, given on their authority as experts in accounting and auditing.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus certain information we file with it, which means that we can disclose important information by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. We incorporate by reference the documents listed below and all documents subsequently filed with the SEC (excluding any portions of any Form 8-K that are not deemed "filed" pursuant to the General Instructions of Form 8-K) pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, after the date of this prospectus and prior to the date this offering is terminated or we issue all of the securities under this prospectus:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2024, filed with the SEC on March 24, 2025;
- our Quarterly Report on [Form 10-Q](#) for the quarterly period ended March 31, 2025, filed with the SEC on May 12, 2025;
- our Current Reports on Form 8-K, filed with the SEC on [January 6, 2025](#), [February 13, 2025](#), [February 21, 2025](#), [February 25, 2025](#), [March 11, 2025](#), [March 11, 2025](#), [March 14, 2025](#), [March 27, 2025](#), [March 31, 2025](#), [April 18, 2025](#), [May 20, 2025](#), [June 17, 2025](#), [July 3, 2025](#), and [July 8, 2025](#); and
- the description of our common stock contained in the registration statement on [Form 8-A](#), filed with the SEC on November 17, 2020, and any amendment or report filed for the purpose of updating such description (including [Exhibit 4.1](#) to the Annual Report on Form 10-K for the fiscal year ended December 31, 2023).

To obtain copies of these filings, see "Where You Can Find More Information" in this prospectus. Nothing in this prospectus shall be deemed to incorporate information furnished, but not filed, with the SEC, including pursuant to Item 2.02 or Item 7.01 of Form 8-K and any corresponding information or exhibit furnished under Item 9.01 of Form 8-K.

Information in this prospectus supersedes related information in the documents listed above and information in subsequently filed documents supersedes related information in both this prospectus and the incorporated documents.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the periodic reporting requirements of the Exchange Act, and we will file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information are available at www.sec.gov. We maintain a website at <https://lixte.com>. We have not incorporated by reference into this prospectus the information contained in, or that can be accessed through, our website, and you should not consider it to be a part of this prospectus. You may access our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. You may also request a copy of these filings (other than exhibits to these documents unless the exhibits are specifically incorporated by reference into these documents or referred to in this prospectus), at no cost, by writing us at 680 East Colorado Boulevard, Suite 180, Pasadena, California 91101 or contacting us at (631) 830-7092.

We have filed with the SEC a registration statement under the Securities Act relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You may review a copy of the registration statement and the documents incorporated by reference herein through the SEC's website at www.sec.gov.

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LIXTE BIOTECHNOLOGY HOLDINGS, INC.

PROSPECTUS

July 10, 2025

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the various expenses, all of which will be borne by the registrant, in connection with the sale and distribution of the securities being registered, other than the Placement Agent fees. All amounts shown are estimates except for the SEC registration fee.

SEC registration fee	\$	773.16
Transfer agent and registrar fees		10,000.00
Accounting fees and expenses		50,000.00
Legal fees and expenses		350,000.00
Miscellaneous		29,226.84
Total	\$	440,000.00

Item 14. Indemnification of Directors and Officers.

Section 102(b)(7) of the Delaware General Corporation Law (“DGCL”) provides that a Delaware corporation, in its certificate of incorporation, may limit the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duties as a director, except for liability for any:

- transaction from which the director derived an improper personal benefit;
- act or omission not in good faith or that involved intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or redemption of shares; or
- breach of the director’s duty of loyalty to the corporation or its stockholders.

Under Section 145 of the DGCL, we can indemnify our directors and officers against liabilities they may incur in such capacities, including liabilities under the Securities Act of 1933, as amended (the “Securities Act”). Our certificate of incorporation (Exhibit 3.1 to this registration statement) provides that we must indemnify our directors and officers to the fullest extent permitted by law and requires us to pay expenses incurred in defending or other participating in any proceeding in advance of its final disposition upon our receipt of an undertaking by the director or officer to repay such advances if it is ultimately determined that the director or officer is not entitled to indemnification. Our certificate of incorporation further provides that rights conferred under such certificate of incorporation do not exclude any other right such persons may have or acquire under the certificate of incorporation, the bylaws, any statute, agreement, vote of stockholders or disinterested directors or otherwise.

The certificate of incorporation also provides that, pursuant to Delaware law, our directors shall not be liable for monetary damages for breach of the directors’ fiduciary duty of care to us and our stockholders. This provision in the certificate of incorporation does not eliminate the duty of care, and in appropriate circumstances equitable remedies such as injunctive or other forms of non-monetary relief will remain available under Delaware law. In addition, each director will continue to be subject to liability for breach of the director’s duty of loyalty to us for acts or omissions not in good faith or involving intentional misconduct, or knowing violations of law, for actions leading to improper personal benefit to the director, and for payment of dividends or approval of stock repurchases or redemptions that are unlawful under Delaware law. The provision also does not affect a director’s responsibilities under any other law, such as the federal securities laws or state or federal environmental laws. We also intend to obtain directors’ and officers’ liability insurance pursuant to which our directors and officers are insured against liability for actions taken in their capacities as directors and officers.

In addition, we have entered into agreements to indemnify our directors and certain of our officers in addition to the indemnification provided for in the certificate of incorporation. These agreements, among other things, indemnify our directors and some of our officers for certain expenses (including attorney’s fees), judgments, fines and settlement amounts incurred by such person in any action or proceeding, including any action by or in our right, on account of services by that person as a director or officer of our company or as a director or officer of our subsidiary, or as a director or officer of any other company or enterprise that the person provides services to at our request.

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Item 15. Recent Sales of Unregistered Securities.

The information below lists all of the securities sold by us during the past three years which were not registered under the Securities Act:

On May 16, 2025, the Company received a notice of conversion with respect to its 350,000 shares of Series A Convertible Preferred Stock outstanding. These shares of preferred stock were issued to an investor in 2015 and 2016 and were convertible into 72,917 shares of common stock on such date.

Item 16. Exhibits and Financial Statement Schedules.

A list of exhibits to this registration statement is set forth in the Index to Exhibits as presented below.

INDEX TO EXHIBITS

Exhibit Number	Description of Document
2.1	Share Exchange Agreement dated as of June 8, 2006 among the Company, John S. Kovach and Lixte Biotechnology, Inc., filed as Exhibit 2.1 to the Company’s Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 7, 2006 and incorporated herein by reference.
3.1	Certificate of Incorporation, as filed with the Delaware Secretary of State on May 24, 2005, filed as Exhibit 3.1 to the Company’s Registration Statement on Form 10-SB, as filed with the Securities and Exchange Commission on August 3, 2005 and incorporated herein by reference.
3.2	Certificate of Amendment of Certificate of Incorporation, filed as Appendix A to the Company’s Information Statement, as filed with the Securities and Exchange Commission on September 19, 2006 and incorporated herein by reference.
3.3	Certificate of Designations for the Company’s Series A Convertible Preferred Stock, filed as Exhibit 4.01 to the Company’s Current Report on Form 8-K, as filed with the Securities and Exchange Commission on March 18, 2015 and incorporated herein by reference.
3.4	Certificate of Amendment of Certificate of Designations of the Series A Convertible Preferred Stock, filed as Exhibit 3.4 to the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2015, as filed with the Securities and Exchange Commission on March 28, 2016 and incorporated herein by reference.
3.5	Amended and Restated Bylaws, filed as Exhibit 3.1 to the Company’s Current Report on Form 8-K, as filed with the Securities and Exchange Commission on November 10, 2022 and incorporated herein by reference.
3.6	Certificate of Amendment of Certificate of Incorporation, filed as Exhibit 3.1 to the Company’s Current Report on Form 8-K, as filed with the Securities and Exchange Commission on November 27, 2020 and incorporated herein by reference.

- 3.7 [Certificate of Amendment to the Certificate of Incorporation of Lixte Biotechnology Holdings, Inc., filed as Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on June 6, 2023 and incorporated herein by reference.](#)
- 4.1 [Description of Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934, as amended, filed as Exhibit 4.1 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2019, as filed with the Securities and Exchange Commission on March 25, 2020 and incorporated herein by reference.](#)
- 4.2 [Form of Public Common Stock Purchase Warrant included in Unit, filed as Exhibit 4.2 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on November 27, 2020 and incorporated herein by reference.](#)
- 4.3 [Form of Common Stock Purchase Warrant, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 20, 2023 and incorporated herein by reference.](#)
- 4.4 [Form of Placement Agent Common Stock Purchase Warrant, filed as Exhibit 4.3 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 20, 2023 and incorporated herein by reference.](#)
- 4.5 [Form of Common Stock Purchase Warrant, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on February 13, 2025 and incorporated herein by reference.](#)
- 4.6 [Form of Placement Agent Common Stock Purchase Warrant, filed as Exhibit 4.2 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on February 13, 2025 and incorporated herein by reference.](#)
- 4.7 [Series B Certificate of Designation, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 3, 2025.**](#)
- 4.8 [Form of Pre-Funded Warrant, filed as Exhibit 4.2 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 3, 2025.**](#)
- 4.9 [Form of Common Stock Warrant, filed as Exhibit 4.3 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 3, 2025.**](#)
- 4.10 [Form of Placement Agent Warrant.*](#)
- 5.1 [Opinion of TroyGould PC*](#)
- 10.1 [Master Agreement between Lixte Biotechnology Holdings, Inc. and Theradex Systems, Inc. dated January 12, 2010, filed as Exhibit 10.15 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2012, as filed with the Securities and Exchange Commission on March 15, 2013 and incorporated herein by reference.](#)
- 10.2 [Materials Cooperative Research and Development Agreement between Lixte Biotechnology Holdings, Inc. and the National Institute of Neurological Disorders and Stroke dated October 18, 2013, filed as Exhibit 10.16 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013, as filed with the Securities and Exchange Commission on March 21, 2014 and incorporated herein by reference.](#)
- 10.3 [Collaboration Agreement between Lixte Biotechnology Holdings, Inc. and BioPharmaWorks LLC effective September 14, 2015, filed as Exhibit 10.01 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on September 18, 2015 and incorporated herein by reference.](#)
- 10.4 [Collaboration Agreement for an Investigator-Initiated Clinical Trial between Lixte Biotechnology Holdings, Inc. and the Spanish Sarcoma Group as of July 31, 2019 \(certain portions of this exhibit have been omitted based on a request for confidential treatment filed by the Company with the Securities and Exchange Commission that was granted on September 19, 2019\), filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on August 6, 2019 and incorporated herein by reference.](#)

- 10.5 [Employment Agreement Between the Company and Robert N. Weingarten, filed as Exhibit 10.02 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on August 18, 2020 and incorporated herein by reference.+](#)
- 10.6 [Employment Agreement Between the Company and Eric Forman, filed as Exhibit 10.02 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 17, 2020 and incorporated herein by reference.+](#)
- 10.7 [Amendment to Employment Agreement between the Company and Eric Forman, filed as Exhibit 10.21 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, as filed with the Securities and Exchange Commission on March 26, 2021.+](#)
- 10.8 [Second Amendment to Employment Agreement between the Company and Eric Forman, filed as Exhibit 10.15 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as filed with the Securities and Exchange Commission on March 29, 2023 and incorporated herein by reference.+](#)
- 10.9 [Lixte Biotechnology Holdings, Inc. 2020 Stock Incentive Plan, filed as Exhibit 10.1 to the Company Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 17, 2020 and incorporated herein by reference.+](#)
- 10.10 [Lixte Biotechnology Holdings, Inc. 2020 Stock Incentive Plan \(as amended\), filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on November 28, 2023 and incorporated herein by reference.+](#)
- 10.11 [Development Collaboration Agreement by and between Lixte Biotechnology Holdings, Inc. and the Netherlands Cancer Institute, Amsterdam, and OncoCode Institute, Utrecht, entered into on October 8, 2021 \(certain portions of this Exhibit have been omitted\), filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2021, as filed with the Securities and Exchange Commission on November 10, 2021 and incorporated herein by reference.](#)
- 10.12 [Insider Trading Policy, filed as Exhibit 10.21 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as filed with the Securities and Exchange Commission on March 29, 2023 and incorporated herein by reference.](#)

- 10.13 [Compensation Clawback Policy, filed as Exhibit 10.16 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2023, as filed with the Securities and Exchange Commission on March 19, 2024 and incorporated herein by reference.+](#)
- 10.14 [Amendment to Contract between Lixte Biotechnology Holdings, Inc. and MRI Global effective April 17, 2022, filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2023, as filed with the Securities and Exchange Commission on May 10, 2023 and incorporated herein by reference.](#)
- 10.15 [Securities Purchase Agreement, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 20, 2023 and incorporated herein by reference.](#)
- 10.16 [Employment Agreement between the Company and Bastiaan van der Baan effective September 26, 2023, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on September 27, 2023 and incorporated herein by reference.](#)
- 10.17 [Amendment No. 1 to Development Collaboration Agreement by and between Lixte Biotechnology Holdings, Inc. and the Netherlands Cancer Institute, Amsterdam, and the Oncode Institute, Utrecht, entered into on October 8, 2021, filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, as filed with the Securities and Exchange Commission on November 9, 2023 and incorporated herein by reference.](#)

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- 10.18 [Amendment No. 2 to Development Collaboration Agreement by and between Lixte Biotechnology Holdings, Inc. and the Netherlands Cancer Institute, Amsterdam, and the Oncode Institute, Utrecht, entered into on October 13, 2023 \(certain portions of this Exhibit have been omitted\), filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on October 17, 2023 and incorporated herein by reference.](#)
- 10.19 [Termination letter between H. Lee Moffitt Cancer Center and Research Institute, Inc. and the Company dated October 4, 2023 and effective as of September 30, 2023, filed as Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, as filed with the Securities and Exchange Commission on November 9, 2023 and incorporated herein by reference.](#)
- 10.20 [Exclusive Patent License Agreement between Lixte Biotechnology, Inc. and the National Institute of Neurological Disorders and Stroke and the National Cancer Institute, each a component of the National Institute of Health, effective as of February 23, 2024, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on February 26, 2024 and incorporated herein by reference.](#)
- 10.21 [Consulting Agreement between the Company and Dr. Jan Schellens dated as of May 31, 2024, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on June 5, 2024 and incorporated herein by reference.+](#)
- 10.22 [Clinical Trial Agreement between the Company and the Netherlands Cancer Institute dated as of June 10, 2024, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on June 14, 2024 and incorporated herein by reference.](#)
- 10.23 [Securities Purchase Agreement filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on February 13, 2025 and incorporated herein by reference.](#)
- 10.24 [Employment Agreement between the Company and Geordan Pursglove dated as of June 16, 2025, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on June 17, 2025 and incorporated herein by reference.+](#)
- 10.25 [Amendment to Employment Agreement between the Company and Bastiaan van der Baan dated as of June 16, 2025, filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on June 17, 2025 and incorporated herein by reference.+](#)
- 10.26 [Form of Securities Purchase Agreement, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 3, 2025.**](#)
- 10.27 [Form of Placement Agent Agreement, filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on July 3, 2025.**](#)
- 21.1 [Subsidiaries of the Registrant, filed as Exhibit 21.1 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as filed with the Securities and Exchange Commission on March 29, 2023 and incorporated herein by reference.](#)
- 23.1 [Consent of Weinberg & Company, P.A., Independent Registered Public Accounting Firm*](#)
- 23.2 [Consent of TroyGould PC \(included in Exhibit 5.1\)](#)
- 24.1 [Power of Attorney \(included on the signature line\)*](#)
- 107 [Filing Fee Table*](#)

* Filed herewith.

** Previously filed.

+ Indicates a management contract or any compensatory plan, contract or arrangement.

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Item 17. Undertakings.

The undersigned registrant hereby undertakes:

- (a)(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;

- (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 amount may be reflected in the form of prospectus filed with the SEC 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; and
- (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 SEC by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 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 purposes of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (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 in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

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- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for the purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) 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 of 1933 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.
- (d) That,
 - (1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933 shall be deemed to be part of this registration statement as of the time it was declared effective.
 - (2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Pasadena, State of California, on July 10, 2025.

Lixte Biotechnology Holdings, Inc.

By: /s/ Geordan Pursglove
 Name: Geordan Pursglove
 Title: Chief Executive Officer
 (Principal Executive Officer)

POWER OF ATTORNEY

Each person whose signature appears below appoints Geordan Pursglove and Robert Weingarten, and each of them, each of whom may act without the joinder of the other, as their true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution for them and in their name, place and stead, in any and all capacities to

sign any and all amendments (including post-effective amendments) to this registration statement (and to any registration statement filed pursuant to Rule 462 under the Securities Act of 1933, as amended), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as they might or would do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title(s)</u>	<u>Date</u>
<u>/s/ Geordan Pursglove</u> Geordan Pursglove	Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)	July 10, 2025
<u>/s/ Bastiaan van der Baan</u> Bastiaan van der Baan	President, Chief Scientific Officer and Director	July 10, 2025
<u>/s/ Robert Weingarten</u> Robert Weingarten	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	July 10, 2025
<u>*</u> Stephen Forman	Director	July 10, 2025
<u>*</u> Yun Yen	Director	July 10, 2025
<u>*</u> Rene Bernards	Director	July 10, 2025
<u>*</u> Regina Brown	Director	July 10, 2025

*By: /s/ Robert Weingarten, Attorney-in-Fact

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

PIPE PLACEMENT AGENT WARRANT TO PURCHASE COMMON STOCK

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

Warrant Shares: 315,626

Initial Exercise Date: June 30, 2025

Issuance Date: June 30, 2025

THIS WARRANT TO PURCHASE COMMON STOCK (the “**Warrant**”) certifies that, for value received, Spartan Capital Securities, LLC or its assigns (the “**Holder**”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the Initial Exercise Date and on or prior to 5:00 p.m. (New York City time) on the sixty (60) month anniversary of the Release Date (the “**Termination Date**”) but not thereafter, to subscribe for and purchase from Lixte Biotechnology Holdings, Inc., a Delaware corporation (the “**Company**”), up to 315,626 shares (as subject to adjustment hereunder, the “**Warrant Shares**”) of Common Stock. Subject to the provisions of Section 0, the purchase price of one (1) share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2.2.

1. **Definitions.** In addition to the terms defined elsewhere in this Warrant or in the Securities Purchase Agreement dated June 30, 2025 by and among the Company and the investors (the “**Purchasers**”) referred to therein (the “**Securities Purchase Agreement**”), the following terms have the meanings indicated in this Section 1:

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

1.2. “**Bid Price**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB[®] Venture Market or OTCQX[®] Best Market is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the OTC Markets Group Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

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

1.4. “**Business Day**” means a Calendar Day other than a Saturday, Sunday or any other Calendar Day which is a federal legal holiday in the United States or any Calendar Day on which the commercial banks in the City of New York are required by law or other governmental action to close, provided that the commercial banks in the City of New York shall not be deemed to be required to be closed due to a “stay at home,” “shelter in place,” “non-essential employee” or 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 Calendar Day.

1.5. “**Calendar Day**” means each and every day of the week (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday).

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

1.7. “**Common Stock**” means the common stock of the Company, \$0.0001 par value per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

1.8. “**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.

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

1.10. “**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.

1.11. “**Release Date**” means the earlier of (i) the Resale Effective Date or (ii) the date that the Securities can be sold, assigned or transferred without restriction or limitation pursuant to Rule 144 or Rule 144A promulgated under the 1933 Act, as amended (or a successor rule thereto).

1.12. “**Resale Effective Date**” means the earliest of the date that (a) one or more Resale Registration Statements registering for resale all Shares and Warrant Shares have been declared effective by the Commission, (b) all of the Shares and Warrant Shares have been sold pursuant to Rule 144 or may be sold pursuant to Rule 144 without the requirement for the Company to be in compliance with the current public information required under Rule 144 and without volume or manner-of-sale restrictions, (c) following the one year anniversary of the Closing Date provided that the applicable holder of Shares and Warrant Shares is not an Affiliate of the Company, or (d) all of the Shares and Warrant Shares may be sold pursuant to an exemption from registration under Section 4(a)(1) of the Securities Act without volume or manner-of-sale restrictions and TroyGould PC has delivered to such holders a standing written unqualified opinion that resales may then be made by such holders of the Shares and Warrant Shares pursuant to such exemption which opinion shall be in form and substance reasonably acceptable to such holders.

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

1.14. “**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.

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

1.16. “**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, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

1.17. “**Transaction Documents**” means the Securities Purchase Agreement, these Warrants, such other Warrants as contemplated in the Securities Purchase Agreement, the Registration Rights Agreement, the Placement Agent Agreement, the Lock-Up Agreement and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

1.18. “**Transfer Agent**” means Computershare Trust Company, N.A., the current transfer agent of the Company, with a mailing address of 150 Royall Street, Suite 101 Canton, MA 02021.

1.19. “**VWAP**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the OTC Markets Group Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

1.20. “**Warrants**” means this Warrant and other Common Stock purchase warrants issued by the Company pursuant to the Securities Purchase Agreement.

2. Exercise.

2.1. **Exercise of Warrant.** Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise substantially in the form attached hereto as Exhibit 2.1 (the “**Notice of Exercise**”). Within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2.3.1 herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2.2 below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days after the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day after receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

2.2. **Exercise Price.** The exercise price per Warrant Share shall be \$1.25, subject to adjustment hereunder (the “**Exercise Price**”).

Cashless Exercise. If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder or the resale of the Warrant Shares by the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) delivered pursuant to Section 2.1 hereof on a Calendar Day that is not a Trading Day or (2) delivered pursuant to Section 2.1 hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the highest Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. within two (2) hours of the Holder’s delivery of the Notice of Exercise pursuant to Section 2.1 hereof if such Notice of Exercise is delivered during “regular trading hours,” or within two (2) hours after the close of “regular trading hours” on a Trading Day or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is delivered pursuant to Section 2.1 hereof two (2) or more hours following the close of “regular trading hours” on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

Automatic Cashless Exercise on Termination Date. Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to Section 0. If such automatic exercise would result in the Holder exceeding the Beneficial Ownership Limitation, as defined in Section 2.4 hereof, then the Company shall hold in abeyance delivery of any Shares in excess of such Beneficial Ownership Limitation until such time as the Holder notifies the Company that delivery of such Shares would not exceed the Beneficial Ownership Limitation.

Holding Period for Cashless Exercise. If Warrant Shares are issued in a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the holding period of the Warrant Shares being issued may be tacked on to the holding period of this Warrant. Without limiting any other provision in the Transaction Documents, assuming (i) the Holder is not an Affiliate of the Company, and (ii) all of the applicable conditions of Rule 144 promulgated under the

Securities Act with respect to Holder and the Warrant Shares are met in the case of such a cashless exercise, the Company agrees that the Company will cause the removal of the legend from such Warrant Shares (including by delivering an opinion of TroyGould PC to the Company's transfer agent at its own expense to ensure the foregoing), and the Company agrees that the Holder is under no obligation to sell the Warrant Shares issuable upon the exercise of the Warrant prior to removing the legend. The Company agrees not to take any position contrary to this Section 0.

2.3. Mechanics of Exercise.

2.3.1. **Delivery of Warrant Shares upon Exercise.** The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit and Withdrawal at Custodian service ("DWAC") if the Company is then a participant in such system 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 Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 (assuming cashless exercise of the Warrants), and otherwise by physical delivery of a certificate or by electronic delivery (at the election of the Holder), for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earlier of (i) one (1) Trading Day after the delivery to the Company of the Notice of Exercise and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "**Warrant Share Delivery Date**"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. Notwithstanding anything herein to the contrary, upon delivery of the Notice of Exercise, the Holder shall immediately be deemed for purposes of Regulation SHO under the Exchange Act to have become the holder of the Warrant Shares irrespective of the date of delivery of the Warrant Shares. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share 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 subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the third (3rd) Trading Day after the Warrant Share Delivery Date) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a Transfer Agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "**Standard Settlement Period**" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Initial Exercise Date, which may be delivered at any time after the time of execution of the Securities Purchase Agreement, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date and the Initial Exercise Date shall be the Warrant Share Delivery Date for purposes hereunder, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received by such Warrant Share Delivery Date.

2.3.2. **Delivery of New Warrants Upon Exercise.** If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

2.3.3. **Rescission Rights.** If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2.3.1 by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

2.3.4. **Compensation for Buy-In on Failure to Timely Deliver Warrant Shares upon Exercise.** In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2.3.1 above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored and return any amount received by the Company in respect of the Exercise Price for those Warrant Shares (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

2.3.5. **No Fractional Shares or Scrip.** No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

2.3.6. **Charges, Taxes and Expenses.** Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto as Exhibit 2.3.6 duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same- Trading Day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-Trading Day electronic delivery of the Warrant Shares.

2.3.7. **Closing of Books.** The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

2.4. **Holder's Exercise Limitations.** The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons,

“Attribution Parties”)), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2.4, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2.4 applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder’s determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2.4, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company’s most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one (1) Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The **“Beneficial Ownership Limitation”** shall be 4.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2.4 to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

3. **Certain Adjustments.**

3.1. **Stock Dividends and Splits.** If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of Shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3.1 shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

3.2. **Subsequent Rights Offerings.** In addition to any adjustments pursuant to Section 3.1 above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to all (or substantially all) of the record holders of any class of shares of Common Stock (the **“Purchase Rights”**), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder’s right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

3.3. **Pro Rata Distributions.** During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to all (or substantially all) holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a **“Distribution”**), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation). To the extent that this Warrant has not been partially or completely exercised at the time of such Distribution, such portion of the Distribution shall be held in abeyance for the benefit of the Holder until the Holder has exercised this Warrant.

3.4. **Fundamental Transaction.** If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company or any Subsidiary, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock or 50% or more of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires 50% or more of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity of the Company (each a **“Fundamental Transaction”**), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of

the Holder (without regard to any limitation in Section 2.4 on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “**Alternate Consideration**”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2.4 on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 Trading Days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value (as defined below) of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, that, if the Fundamental Transaction is not within the Company’s control, including not approved by the Company’s Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock/shares of the Successor Entity (which Entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction. “**Black Scholes Value**” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“**Bloomberg**”) determined as of the Trading Day of consummation of the applicable contemplated Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the 100 day volatility as obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable contemplated Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the highest VWAP during the period beginning on the Trading Day immediately preceding the public announcement of the applicable contemplated Fundamental Transaction (or the consummation of the applicable Fundamental Transaction, if earlier) and ending on the Trading Day of the Holder’s request pursuant to this Section 3.4 and (D) a remaining option time equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds (or such other consideration) within the later of (i) five (5) Business Days after the Holder’s election and (ii) the date of consummation of the Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “**Successor Entity**”) to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3.4 pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant that is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock prior to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term “Company” under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company, may exercise every right and power of the Company prior thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 3.4 regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Initial Exercise Date.

3.5. Calculations. All calculations under this Section 3 shall be made to the nearest fraction of a cent as in the initial Exercise Price or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

3.6. Notice to Holder.

3.6.1. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

3.6.2. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company (or any of its Subsidiaries) is a party, any sale or transfer of all or substantially all of its assets, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by email to the Holder at its last email address as it shall appear upon the Warrant Register of the Company, at least twenty (20) Calendar Days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

3.7. Voluntary Adjustment by Company. Subject to the rules and regulations of the Trading Market and the consent of the Holder, the Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors.

4.1. **Transferability.** Subject to compliance with any applicable securities laws and the conditions set forth in Section 4.4 hereof, this Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto as Exhibit 2.3.6 duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days after the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

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4.2. **New Warrants.** This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4.1, as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial Issuance Date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

4.3. **Warrant Register.** The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the **"Warrant Register"**), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

4.4. **Transfer Restrictions.** If, at the time of the surrender of this Warrant in connection with any transfer of this Warrant, the transfer of this Warrant shall not be either (i) registered pursuant to an effective registration statement under the Securities Act and under applicable state securities or blue sky laws or (ii) eligible for resale without volume or manner-of-sale restrictions or current public information requirements pursuant to Rule 144, the Company may require, as a condition of allowing such transfer, that (x) the transferor (other than in connection with a transfer to an Affiliate of the transferor) provide to the Company an opinion of counsel to the effect that such transfer does not require registration of such transferred Warrant under the Securities Act and (y) that the transferee agree in writing to be bound by the terms of the Securities Purchase Agreement and Registration Rights Agreement, with all the rights and obligations of a Purchaser under such agreements.

4.5. **Representation by the Holder.** The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

5. **Miscellaneous.**

5.1. **No Rights as Stockholder until Exercise; No Settlement in Cash.** This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2.3.1, except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a "cashless exercise" pursuant to Section 0or to receive cash payments pursuant to Section 2.3.1 and Section 2.3.4 herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

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5.2. **Loss, Theft, Destruction or Mutilation of Warrant.** The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

5.3. **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 Trading Day, then such action may be taken, or such right may be exercised, on the next succeeding Trading Day.

5.4. **Authorized Shares.**

5.4.1. **Reservation of Authorized and Unissued Shares.** The Company covenants that, while the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares of Common Stock to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable (which means that no further sums are required to be paid by the holders thereof in connection with the issue thereof) and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue). If the Company does not have a sufficient number of authorized and unissued shares of Common Stock available to honor the exercise of Warrants, the Company shall allocate the available number of Warrant Shares on a pro rata basis among all Holders exercising Warrants, until such time as the Company has a sufficient number of authorized Common Stock to issue all Warrant Shares in full.

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5.4.2. **Noncircumvention.** Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

5.4.3. **Authorizations, Exemptions and Consents.** Before taking any action that would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

5.5. **Governing Law.** All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, 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 Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, stockholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of Wilmington. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of Wilmington, County of New Castle for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, 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 suit, 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 Warrant 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, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. Notwithstanding the foregoing, nothing in this paragraph shall limit or restrict the federal district court in which a Holder may bring a claim under the federal securities laws.

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5.6. **Restrictions.** The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

5.7. **Nonwaiver and Expenses.** No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies, notwithstanding the fact that the right to exercise this Warrant terminates on the Termination Date. No provision of this Warrant shall be construed as a waiver by the Holder of any rights which the Holder may have under the federal securities laws and the rules and regulations of the Commission thereunder. Without limiting any other provision of this Warrant or the Securities Purchase Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

5.8. **Notices.** Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at 680 East Colorado Boulevard, Suite 180, Pasadena, CA 91101, Attention: Geordan Pursglove, Chief Executive Officer, email address: g.pursglove@2pggroup.com, or such other email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section 5.8 prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section 5.8 on a Calendar Day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of transmittal, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

5.9. **Limitation of Liability.** No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

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5.10. **Remedies.** The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

5.11. **Successors and Assigns.** Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

5.12. **Amendment.** This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and a majority-in-interest of Holders of the Warrants, on the other hand.

5.13. **Severability.** Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant 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 Warrant.

5.14. **Headings.** The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

[LIXT Investor PIPE Common Warrant Signature Page Follows]

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[LIXT Investor Common Warrant Signature Page]

IN WITNESS WHEREOF, the Company has caused this Common Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

By: _____
Name : Geordan Pursglove
Its : CEO

Exhibit 2.1

NOTICE OF EXERCISE

TO: LIXTE BIOTECHNOLOGY HOLDINGS, INC.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

☐ in lawful money of the United States.

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in Section 0, to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in Section 0.

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

The Warrant Shares shall be delivered to the following DWAC Account Number:

(4) The undersigned is an “accredited investor” as defined in Regulation D promulgated under the Securities Act of 1933, as amended.

[LIXT Investor PIPE Common Warrant Exercise Notice – Investor Signature Page]

Name of Investing Entity: _____
Signature of Authorized Signatory of Investing Entity: _____
Name of Authorized Signatory: _____
Title of Authorized Signatory: _____
Date: _____

Exhibit 2.3.6

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to exercise the Warrant to purchase shares of Common Stock.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
Address: _____
Phone Number: _____
Email Address: _____
Date: _____
Holder's Signature: _____
Holder's Address: _____



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July 10, 2025

Lixte Biotechnology Holdings, Inc.
 680 East Colorado Boulevard, Suite 180
 Pasadena, CA 91101

Dear Ladies and Gentlemen:

We have acted as counsel to Lixte Biotechnology Holdings, Inc., a Delaware corporation (the “Company”), in connection with the Registration Statement on Form S-1 (as amended, the “Registration Statement”) filed by the Company on July 8, 2025 with the Securities and Exchange Commission (the “Commission”) under the Securities Act of 1933, as amended (the “Securities Act”), and the related prospectus contained therein (the “Prospectus”). The Registration Statement relates to the offering by the Selling Stockholders named in the Registration Statement of up to a maximum aggregate offering of 12,626,054 shares, which consists of (i) 59,552 shares of the Company’s Common Stock (the “Common Shares”), (ii) 2,322,532 shares of Common Stock issuable pursuant to the exercise of Pre-Funded Warrants (the “Pre-Funded Warrant Shares”), (iii) 6,355,214 shares of Common Stock issuable pursuant to the exercise of Common Stock Warrants (the “July 2025 Warrant Shares”), (iv) 3,573,130 shares of Common Stock issuable pursuant to the conversion of the Company’s Series B Preferred Stock (the “Conversion Shares”), and (v) 315,626 shares of Common Stock issuable pursuant to the exercise of Common Stock Warrants issued to the Placement Agent.

In connection with our opinion, we have examined the Registration Statement, including the exhibits thereto and the form of Pre-Funded Warrant, Common Stock Warrant, Placement Agent Warrant, and the Certificate of Designation relating to the Conversion Shares and such other documents, corporate records and instruments, and have examined such laws and regulations, as we have deemed necessary for the purposes of this opinion. In making our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity with the originals of all documents submitted to us as copies and the legal capacity of all natural persons. As to matters of fact material to our opinions in this letter, we have relied on certificates and statements from officers and other employees of the Company, public officials and other appropriate persons.

Based on the foregoing and subject to the qualifications set forth below, we are of the opinion that:

1. When the Conversion Shares have been duly registered on the books of the transfer agent in the name of or on behalf of the holders thereof and have been issued by the Company in the circumstances contemplated by the Certificate of Designation of the Series B Preferred Stock, the Conversion Shares will be duly authorized by all necessary corporate action of the Company and will be validly issued, fully paid, and non-assessable;
2. When the Common Stock Warrant Shares and the Placement Agent Warrant Shares have been duly registered on the books of the transfer agent in the name of or on behalf of the Common Stock Warrant holders and the Placement Agent and have been issued by the Company against payment therefor in the circumstances contemplated by the Common Stock Warrants, the Common Stock Warrant Shares and the Placement Agent Shares will be duly authorized by all necessary corporate action of the Company and will be validly issued, fully paid, and non-assessable; and
3. When the Pre-Funded Warrant Shares have been duly registered on the books of the transfer agent in the name of or on behalf of the Pre-Funded Warrant holders and have been issued by the Company against payment therefor, Pre-Funded Warrant Shares will be duly authorized by all necessary corporate action of the Company and will be validly issued, fully paid, and non-assessable.



Lixte Biotechnology Holdings, Inc.
 July 10, 2025
 Page 2

The opinions set forth above are subject to the following qualifications:

- A. The opinion expressed herein with respect to the legality, validity, binding nature and enforceability of the Pre-Funded Warrants is subject to (i) applicable laws relating to bankruptcy, insolvency, reorganization, moratorium, fraudulent transfer or other similar laws affecting creditors’ rights generally, whether now or hereafter in effect and (ii) general principles of equity, including, without limitation, concepts of materiality, laches, reasonableness, good faith and fair dealing and the principles regarding when injunctive relief or other equitable remedies will be available (regardless of whether considered in a proceeding at law or in equity).
- B. The foregoing opinions are limited to the General Corporation Law of Delaware (which includes those statutory provisions and all applicable provisions of the Delaware Constitution and the reported judicial decisions interpreting such laws) and the federal laws of the United States of America, and we express no opinion as to the laws of any other jurisdiction.
- C. Upon the issuance of any of the conversion shares, the Common Stock Warrant Shares, the Placement Agent Warrant Shares, and the Pre-Funded Warrant Shares, the total number of shares of Common Stock issued and outstanding will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its Certificate of Incorporation.

The opinions expressed in this opinion letter are as of the date of this opinion letter only and as to laws covered hereby only as they are in effect on that date, and we assume no obligation to update or supplement such opinion to reflect any facts or circumstances that may come to our attention after that date or any changes in law that may occur or become effective after that date. The opinions herein are limited to the matters expressly set forth in this opinion letter, and no opinion or representation is given or may be inferred beyond the opinions expressly set forth in this opinion letter.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement and to the use of this firm’s name under the caption “Legal Matters” in the Registration Statement. In giving this consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ TroyGould PC

TroyGould PC

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Amendment No. 2 to the Registration Statement on Form S-1 (File No. 333-288120) of our report dated March 24, 2025, relating to the consolidated financial statements of Lixte Biotechnology Holdings, Inc., as of and for the years ended December 31, 2024 and 2023 (which report includes an explanatory paragraph regarding substantial doubt about the Company's ability to continue as a going concern) included in Lixte Biotechnology Holdings, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2024, filed with the Securities and Exchange Commission. We also consent to the reference to our firm under the caption "Experts" in the Prospectus, which is part of this Registration Statement.

/s/ Weinberg & Company, P.A.
Los Angeles, California
July 10, 2025

Calculation of Filing Fee Table

FORM S-1
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933
(Form Type)

Lixte Biotechnology Holdings, Inc.
(Exact Name of Registrant as Specified in its Charter)
Table 1: Newly Registered Securities

<u>Security Type</u>	<u>Security Class Title</u>	<u>Fee Calculation Rule</u>	<u>Amount Registered</u>	<u>Proposed Maximum Offering Price Per Share</u>	<u>Maximum Aggregate Offering Price</u>	<u>Fee Rate</u>	<u>Amount of Registration Fee</u>
Newly Registered Securities							
Fees to Be Paid	Equity	Common Stock, par value \$0.0001 per share	457(c)	\$	\$ 5,050,000	0.00015310	\$ 773.16
Fees Previously Paid	-	-	-	-	-	-	-
Total Offering Amounts					\$ 5,050,000		\$ 773.16
Total Fees Previously Paid					\$ -		\$ -
Total Fee Offsets					\$ -		\$ -
Net Fees Due					\$ -		\$ 773.16

- (1) Represents shares of common stock of the Company, which consists of (i) 3,573,130 shares of common stock issuable upon the conversion of 3,573,130 shares of Series B Preferred Stock, (ii) 2,322,532 shares of common stock issuable upon the exercise of pre-funded warrants sold in the July 2025 private placement, (iii) 59,552 shares of common stock sold in the July 2025 private placement, (iv) 6,355,124 shares of common stock issuable upon the exercise warrants sold in the July 2025 private placement, and (v) 315,626 shares of common stock issuable upon the exercise of placement agent warrants issued in the July 2025 private placement.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(c) under the Securities Act.
- (3) Pursuant to Rule 416 under the Securities Act, the Company is also registering an indeterminate number of additional shares of Common Stock as may become issuable by reason of any stock dividends, stock splits, recapitalizations, or other similar transactions.
- (4) The proposed maximum aggregate offering price of the common stock will be reduced on a dollar-for-dollar basis based on the offering price of any pre-funded warrants issued in the offering, and the proposed maximum aggregate offering price of the pre-funded warrants to be issued in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any common stock issued in the offering. Accordingly, the proposed maximum aggregate offering price of the common stock and pre-funded warrants (including the common stock issuable upon exercise of the pre-funded warrants), if any, is \$5,050,000.
- (5) No separate registration fee is payable pursuant to Rule 457(g) under the Securities Act.