

**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**

**MUSTANG BIO, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**2836**  
(Primary Standard Industrial  
Classification Code Number)

**47-3828760**  
(I.R.S. Employer  
Identification Number)

**377 Plantation Street  
Worcester, Massachusetts 01605  
(781) 652-4500**

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

**Manuel Litchman, M.D.  
President and Chief Executive Officer  
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(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 Commission, acting pursuant to said Section 8(a), may determine.**

PRELIMINARY PROSPECTUS



**Up to 15,625,000 Shares of Common Stock and accompanying  
Series A-1 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
Series A-2 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
Series A-3 Warrants to Purchase up to 15,625,000 Shares of Common Stock**

or

**Up to 15,625,000 Pre-funded Warrants to Purchase up to 15,625,000 Shares of Common Stock and accompanying  
Series A-1 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
Series A-2 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
Series A-3 Warrants to Purchase up to 15,625,000 Shares of Common Stock**

**Placement Agent Warrants to Purchase up to 937,500 Shares of Common Stock**

**Up to 63,437,500 Shares of Common Stock Issuable Upon Exercise of  
the Series A-1 Warrants, Series A-2 Warrants, Series A-3 Warrants, Pre-funded Warrants and Placement Agent Warrants**

We are offering up to 15,625,000 shares of common stock, together with accompanying Series A-1 warrants (the “Series A-1 Warrants”) to purchase up to 15,625,000 shares of common stock, Series A-2 warrants (the “Series A-2 Warrants”) to purchase up to 15,625,000 shares of common stock, and Series A-3 warrants to purchase up to 15,625,000 shares of common stock (the “Series A-3 Warrants” and collectively with the Series A-1 Warrants and Series A-2 Warrants, the “Warrants”), pursuant to this prospectus. The assumed combined public offering price for each share of common stock, together with one Series A-1 Warrant, one Series A-2 Warrant and one Series A-3 Warrant, each to purchase one share of common stock, is \$0.32, which is equal to the last reported sale price of our common stock on the Nasdaq Capital Market on April 26, 2024. The shares of common stock and Warrants will be separately issued. Each Warrant will have an exercise price of \$0.32 per share, will be exercisable beginning on the effective date of stockholder approval of the issuance of the shares upon exercise of the Warrants (“Warrant Stockholder Approval”), provided however, if the Pricing Conditions (as defined below) are met, the Warrants will be exercisable upon issuance (the “Initial Exercise Date”). The Series A-1 Warrant will expire on the five-year anniversary of the Initial Exercise Date. The Series A-2 Warrant will expire on the twenty four month anniversary of the Initial Exercise Date. The Series A-3 Warrant will expire on the nine month anniversary of the Initial Exercise Date. As used herein “Pricing Conditions” means that the combined offering price per share and accompanying Warrants is such that the Warrant Stockholder Approval is not required under the rules of the Nasdaq Stock Market LLC (“Nasdaq”) because either (i) the offering is an at-the-market offering under Nasdaq rules and such price equals or exceeds the sum of (a) the applicable “Minimum Price” per share under Nasdaq Rule 5635(d) plus (b) \$0.125 per whole share of common stock underlying the Warrants or (ii) the offering is a discounted offering where the pricing and discount (including attributing a value of \$0.125 per whole share underlying the Warrants) meet the pricing requirements under Nasdaq’s rules.

We are also offering up to 15,625,000 pre-funded warrants (the “pre-funded warrants”) to those purchasers whose purchase of shares of common stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock following the consummation of this offering or if such purchaser otherwise elects to purchase pre-funded warrants, in lieu of the shares of our common stock that would result in ownership in excess of 4.99% (or, at the election of the purchaser, 9.99%). Each pre-funded warrant will be exercisable for one share of common stock at an exercise price of \$0.0001 per share. Each pre-funded warrant is being issued together with the same Warrants described above being issued with each share of common stock. The assumed combined public offering price for each such pre-funded warrant, together with accompanying Warrants to purchase common stock, is \$0.3199, which is the assumed combined public offering price per share and Warrants (equal to the last reported sale price of our common stock on Nasdaq on April 26, 2024), minus \$0.0001. Each pre-funded warrant will be exercisable upon issuance and may be exercised at any time until all of the pre-funded warrants are exercised in full. The pre-funded warrants and accompanying Warrants are immediately separable and will be issued separately in this offering. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the Warrants, pre-funded warrants and Placement Agent Warrants (as defined herein). For each pre-funded warrant sold, the number of shares of common stock sold will be reduced on a 1-for-1 basis.

There is no established public trading market for the Warrants or the pre-funded warrants, and we do not expect a market to develop. We do not intend to apply for listing of the Warrants or the pre-funded warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Warrants and the pre-funded warrants will be limited.

This offering will terminate on May 13, 2024, unless we decide to terminate the offering (which we may do at any time in our discretion) prior to that date. We will have one closing for all the securities purchased in this offering. The combined public offering price per share of common stock (or pre-funded warrant) and accompanying Warrants will be fixed for the duration of this offering.

We have engaged H.C. Wainwright & Co., LLC (the “Placement Agent”), to act as our exclusive placement agent in connection with this offering. The Placement Agent has agreed to use its reasonable best efforts to arrange for the sale of the securities offered by this prospectus. The Placement Agent is not purchasing or selling any of the securities we are offering and the Placement Agent is not required to arrange the purchase or sale of any specific number of securities or dollar amount. We have agreed to pay to the Placement Agent the Placement Agent fees set forth in the table below, which assumes that we sell all of the securities offered by this prospectus. There is no minimum number of securities or amount of proceeds required as a condition to closing in this offering. Because there is no minimum offering amount required as a condition to closing this offering, we may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to pursue our business goals described in this prospectus. In addition, because there is no escrow trust or similar arrangement and no minimum offering amount, investors could be in a position where they have invested in our company, but we are unable to fulfill all of our contemplated objectives due to a lack of interest in this offering. Further, any proceeds from the sale of securities offered by us will be available for our immediate use, despite uncertainty about whether we would be able to use such funds to effectively implement our business plan. We will bear all costs associated with the offering. See “Plan of Distribution” on page 46 of this prospectus for more information regarding these arrangements.

Our common stock is listed on the Nasdaq Capital Market under the symbol “MBIO”. On April 26, 2024, the last reported sale price of our common stock on the Nasdaq Capital Market was \$0.32 per share.

The combined offering price per share of common stock and accompanying Warrants and the combined offering price per pre-funded warrant and accompanying Warrants we are offering and the exercise price and other terms of the Warrants will be negotiated between us and the purchasers, in consultation with the Placement Agent based on the trading of our common stock prior to this offering, among other factors. Other factors considered in determining the offering price of the securities we are offering and the exercise price and other terms of the Warrants include the history and prospects of our company, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant. The combined offering price per share of common stock and accompanying Warrants and the combined offering price per pre-funded warrant and accompanying Warrants may be at a discount to the current market price of our common stock. Therefore, the recent market price used throughout this prospectus may differ substantially from the offering price.

We are a “smaller reporting company” as defined under federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements for this prospectus and the documents incorporated by reference herein and may elect to comply with reduced public company reporting requirements in future filings. See “Prospectus Summary—Implications of Being a Smaller Reporting Company.”

**Investing in our securities involves risks. Before deciding whether to invest in our securities, you should consider carefully the risks that we have described on page 19 of this prospectus under the caption “Risk Factors” and under similar headings in other documents incorporated by reference into this prospectus.**

	Per Share and Accompanying Warrants	Per Pre- Funded Warrant and Accompanying Warrants	Total
Public offering price	\$	\$	\$
Placement Agent’s fees <sup>(1)</sup>	\$	\$	\$
Proceeds to us, before expenses <sup>(2)</sup>	\$	\$	\$

(1) We have agreed to pay the Placement Agent a total cash fee equal to 7.0% of the gross proceeds raised in this offering. We have also agreed to pay the Placement Agent a management fee equal to 1.0% of the gross proceeds raised in this offering and to reimburse the Placement Agent for its non-accountable expenses in the amount of \$25,000 and for its legal fees and expenses and other out-of-pocket expenses in an amount up to \$100,000, and for its clearing expenses in the amount of \$15,950. In addition, we have agreed to issue to the Placement Agent, or its designees, warrants to purchase a number of shares of our common stock equal to 6.0% of the aggregate number of shares of common stock and pre-funded warrants being offered at an exercise price equal to 125% of the combined public offering price per share of common stock and accompanying Warrants. We refer you to “Plan of Distribution” on page 46 of this prospectus for additional information regarding Placement Agent compensation.

(2) Because there is no minimum number of securities or amount of proceeds required as a condition to closing in this offering, the actual offering amount, Placement Agent fees, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth above. We refer you to “Plan of Distribution” on page 46 of this prospectus for additional information regarding Placement Agent compensation.

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

We expect to deliver the securities to the purchasers in the offering on or about \_\_\_\_\_, 2024, subject to satisfaction of certain conditions.

**H.C. Wainwright & Co.**

\_\_\_\_\_, 2024

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## ABOUT THIS PROSPECTUS

The registration statement we filed with the Securities and Exchange Commission (the “SEC”) includes exhibits that provide more detail of the matters discussed in this prospectus. You should read this prospectus, the related exhibits filed with the SEC, and the documents incorporated by reference herein before making your investment decision. You should rely only on the information provided in this prospectus and the documents incorporated by reference herein or any amendment thereto. You should not assume that the information contained in this prospectus or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference herein is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus or any related free writing prospectus is delivered, or securities are sold, on a later date. This prospectus contains or incorporates by reference summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been or will be filed or have been or will be incorporated by reference as exhibits to the registration statement of which this prospectus forms a part, and you may obtain copies of those documents as described in this prospectus supplement under the heading “Where You Can Find More Information.”

You should rely only on the information that we have included or incorporated by reference in this prospectus and any related free writing prospectus that we may authorize to be provided to you. Neither we, nor the placement agent, have authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus or any related free writing prospectus that we may authorize to be provided to you. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or any related free writing prospectus. This prospectus and any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor does this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

When we refer to “Mustang,” “we,” “our,” “us” and the “Company” in this prospectus, we mean Mustang Bio, Inc., unless otherwise specified. When we refer to “you,” we mean the potential holders of the applicable securities.

Solely for convenience, tradenames referred to in this prospectus appear without the<sup>®</sup> and<sup>™</sup> symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these tradenames.

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## PROSPECTUS SUMMARY

*This summary highlights information contained elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. Before investing in our common stock, you should carefully read the entire prospectus, including the risks of investing in our securities discussed under the heading “Risk Factors,” “Special Note Regarding Forward-Looking Statements” and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part. Unless the context otherwise requires, the terms “Mustang” “Mustang Bio” “the Company,” “we,” “us,” “our” and similar references in this prospectus refer to Mustang Bio, Inc., the registrant on the cover page of the registration statement of which this prospectus forms a part.*

### Our Business

#### Overview and Product Candidate Development

We are a clinical-stage biopharmaceutical company focused on translating today’s medical breakthroughs in cell and gene therapies into potential cures for hematologic cancers, solid tumors and rare genetic diseases. We aim to acquire rights to these technologies by licensing or otherwise acquiring an ownership interest in the technologies, funding their research and development and eventually either out-licensing or bringing the technologies to market.

Our pipeline is currently focused in two core areas: CAR T therapies for hematologic malignancies and CAR T therapies for solid tumors. For these therapies we have partnered with world class research institutions, including the City of Hope National Medical Center (“COH” or “City of Hope”), Fred Hutchinson Cancer Center (“Fred Hutch”), Nationwide Children’s Hospital (“Nationwide”) and the Mayo Foundation for Medical Education and Research (“Mayo Clinic”).

#### CAR T Therapies

Our pipeline of CAR T therapies is being developed under exclusive licenses from several world class research institutions. Our strategy is to license these technologies, support preclinical and clinical research activities by our partners and transfer the underlying technology to our or our contract manufacturer’s cell processing facility in order to conduct our own clinical trials.

We are developing CAR T therapy for hematologic malignancies in partnership with Fred Hutch targeting CD20 (MB-106). In May 2021, we announced that the U.S. Food and Drug Administration (“FDA”) accepted our Investigational New Drug (“IND”) Application for MB-106. As of December 2023, approximately 40 patients have been treated in an ongoing phase 1 clinical trial sponsored by Fred Hutch (ClinicalTrials.gov Identifier: NCT03277729), and approximately 20 patients have been treated in an ongoing phase 1 clinical trial sponsored by us (ClinicalTrials.gov Identifier: NCT05360238). In 2023, we received Safety Review Committee approval to continue dose escalation in all three active arms of the ongoing Mustang-sponsored phase 1 trial. We presented the latest results, demonstrating a favorable safety profile, complete response rate, and durability, from the ongoing Mustang-sponsored phase 1 trial at the 2023 American Society of Hematology (“ASH”) Annual Meeting. As of December 31, 2023, the MB-106 Mustang-sponsored phase 1 trial is pending one patient to complete the final dose level required to advance to phase 2 pivotal studies for treatment of patients with relapsed or refractory indolent B-cell non-Hodgkin lymphoma.

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We are also developing CAR T therapy for solid tumors in partnership with COH targeting IL13R $\alpha$ 2 (MB-101). In addition, we have partnered with Nationwide for a herpes simplex virus type 1 (“HSV-1”) oncolytic virus (MB-108) in order to enhance the activity of MB-101 for the treatment of patients with high-grade malignant brain tumors. The Phase 1 clinical trial sponsored by COH for MB-101 (ClinicalTrials.gov Identifier: NCT02208362) has completed the treatment phase and patients continue to be assessed for long-term safety. A Phase 1 clinical trial sponsored by the University of Alabama at Birmingham (“UAB”) for MB-108 (ClinicalTrials.gov Identifier: NCT03657576) began during the third quarter of 2019. In October 2023, we announced that the FDA accepted our IND application for the combination of MB-101 and MB-108 – which is referred to as MB-109 – for the treatment of patients with *IL13R $\alpha$ 2*+relapsed or refractory glioblastoma (“GBM”) and high-grade astrocytoma.

Finally, we are collaborating with the Mayo Clinic to develop a novel technology that may be able to transform the administration of CAR T therapies and potentially be used as an off-the-shelf therapy. We are evaluating plans to file an IND application for a multicenter Phase 1 clinical trial once a lead construct has been identified, subject to allocation

of resources.

On May 18, 2023, we announced a series of changes resulting from a review of our portfolio of product candidates to determine the future strategy of our programs and the proper allocation of our resources. Following this review, we determined to discontinue development of our MB-102 (CD123), MB-103 (HER2), MB-104 (CS1) and MB-105 (PSCA) programs, all of which were CAR T therapies being developed in partnership with City of Hope.

### ***Terminated Gene Therapy Product Candidates***

We formerly developed several gene therapy product candidates, which included MB-117 and MB-217 (based on technologies licensed from St. Jude Children's Research Hospital ("St. Jude")) and MB-110 (based on technologies licensed from Leiden University Medical Centre ("LUMC")). In April 2024, we entered into a termination and release agreement with St. Jude, pursuant to which we agreed to terminate the license agreement underpinning the MB-117 and MB-217 product candidates in exchange for a mutual release of liability and forgiveness by St. Jude of all amounts previously owing to them. Also in April 2024, we delivered a termination notice to LUMC pursuant to which we terminated the license agreement underpinning the MB-110 product candidate; we are currently in discussions with LUMC regarding the terms that will govern such termination.

To date, we have not received approval for the sale of any of our product candidates in any market and, therefore, have not generated any product sales from our product candidates. In addition, we have incurred substantial operating losses since our inception, and expect to continue to incur significant operating losses for the foreseeable future and may never become profitable. As of December 31, 2023, we have an accumulated deficit of \$381.0 million.

### **Therapeutic Pipeline**

#### ***Therapies for Oncology and Hematologic Malignancies***

##### **MB-106 (CD20 CAR T for B cell non-Hodgkin lymphoma (NHL) and chronic lymphocytic leukemia (CLL))**

We believe CD20 is a promising target for immunotherapy of B-cell malignancies. CD20 is a B-cell lineage-specific phosphoprotein that is expressed in high, homogeneous density on the surface of more than 95% of B-cell NHL and CLL. CD20 is stable on the cell surface with minimal shedding, internalization, or modulation upon antibody binding and is present at only nanomolar levels as a soluble antigen. It is well established as an effective immunotherapy target, with extensive studies demonstrating improved tumor responses and survival of B-NHL patients treated with rituximab and other anti-CD20 antibodies. Importantly, CD20 continues to be expressed on the lymphoma cells of most patients with relapsed B-NHL despite repetitive rituximab treatments, and loss of CD20 expression is not a major contributor to treatment resistance. Thus, there is strong rationale for testing CD20 CAR T cells as an immunotherapy for NHL.

More than 80,000 new cases of NHL are diagnosed each year in the United States, and over 20,000 patients die of this group of diseases annually. Most forms of NHL, including follicular lymphoma, mantle cell lymphoma, marginal zone lymphoma, lymphoplasmacytic lymphoma, and small lymphocytic lymphoma ("SLL"), which account collectively for approximately 45% of all cases of NHL, are incurable with available therapies, except for allogeneic stem cell transplant ("allo-SCT"). However, many NHL patients are not suitable candidates for allo-SCT, and this treatment is also limited by significant rates of morbidity and mortality due to graft-versus-host disease. Aggressive B-cell lymphomas such as diffuse large B-cell lymphoma, the most common subtype of lymphoma, account for an additional 30-35% of NHL. The majority of patients with aggressive B-NHL are successfully treated with combination chemotherapy, but a significant proportion relapse or have refractory disease, and the outcome of these patients is poor. Innovative new treatments are therefore urgently needed.

Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) is a mature B cell neoplasm characterized by a progressive accumulation of monoclonal B lymphocytes. CLL is considered to be identical (i.e., one disease with different manifestations) to the NHL SLL. The malignant cells seen in CLL and SLL have identical pathologic and immunophenotypic features. The term CLL is used when the disease manifests primarily in the blood, whereas the term SLL is used when involvement is primarily nodal.

CLL is the most common leukemia in adults in Western countries, accounting for approximately 25 to 35 percent of all leukemias in the United States. An estimated 20,700 new cases of CLL will be diagnosed in the United States in 2024. CLL is considered to be mainly a disease afflicting older adults, with a median age at diagnosis of approximately 70 years; however, it is not unusual to make this diagnosis in younger individuals (e.g., from approximately 30 to 39 years of age). The incidence increases rapidly with increasing age. The natural history of CLL is extremely variable, with survival times from initial diagnosis that range from approximately 2 to 20 years, and a median survival of approximately 10 years.

Most patients will have a complete or partial response to initial therapy. However, conventional therapy for CLL is not curative and most patients experience relapse. In addition, many patients will require a change in therapy due to intolerance. Since patients with CLL are generally elderly with a median age older than 70 years, and due to the relatively benign course of the disease in the majority of patients, only selected patients are candidates for intensive treatments such as allo-SCT. Innovative new treatments with a favorable safety profile are therefore urgently needed for patients with relapsed and refractory disease.

Under their IND, Fred Hutch is currently conducting a Phase 1/2 clinical study to evaluate the anti-tumor activity and safety of administering CD20-directed third-generation CAR T cells incorporating both 4-1BB and CD28 co-stimulatory signaling domains (MB-106) to patients with relapsed or refractory B-cell NHL or CLL (ClinicalTrials.gov Identifier: NCT03277729). Secondary endpoints of this study include safety and toxicity, preliminary antitumor activity as measured by overall response rate and complete remission rate, progression-free survival, and overall survival. The study is also assessing CAR T cell persistence and the potential immunogenicity of the cells. Finally, this study was designed so that, together with Fred Hutch, we could determine a recommended Phase 2 dose. Fred Hutch intends to enroll approximately 50 subjects in this study, which is being led by the Principal Investigator Mazyar Shadman, M.D., M.P.H., Associate Professor of Fred Hutch's Clinical Research Division.

The Fred Hutch IND was amended in 2019 to incorporate an optimized manufacturing process that had been developed in collaboration with us.

In May 2021, we announced that the FDA issued a safe to proceed letter for our IND application allowing for initiation of a multi-center Phase 1/2 clinical study of MB-106 in patients with relapsed or refractory B cell NHL or CLL (Clinicaltrials.gov Identifier: NCT05360238). In August 2022, the first patient was treated in our study.

In November 2021, Mustang was awarded a grant of approximately \$2.0 million from NCI of the National Institutes of Health. This two-year award partially funded the Mustang-sponsored multicenter trial to assess the safety, tolerability and efficacy of MB-106. In August 2023, we fully utilized the grant.

In June 2022, MB-106 received Orphan Drug Designation for the treatment of Waldenström macroglobulinemia ("WM").

In December 2023, we presented preliminary clinical data for the indolent lymphoma patients treated in the ongoing Phase 1/2 clinical study at the American Society of Hematology (ASH) annual meeting. All 9 patients responded clinically to treatment; the observed overall response rate was 100%. All 5 follicular lymphoma patients achieved a complete response. Among the WM patients 1 patient attained a very good partial response, and 2 patients attained a partial response. The single patient with a hairy cell leukemia variant experienced stable disease. The safety profile demonstrated that MB-106 was well tolerated with no occurrences of cytokine release syndrome (“CRS”) above grade 1, and no immune effector cell-associated neurotoxicity syndrome (“ICANS”) of any grade was reported. Cell expansion and persistence were also demonstrated.

In the first quarter of 2024, we completed a successful End-of-Phase 1 meeting with the FDA regarding a potential pivotal Phase 2 single-arm clinical trial for the treatment of WM. Per the discussions, the FDA agreed with the proposed overall design of the pivotal trial for WM at the recommended dose of  $1 \times 10^7$  CAR-T cells/kg and requested only minimal modifications to the study protocol. No additional nonclinical studies are expected prior to Phase 2 or a Biologics License Application (“BLA”) filing. Due to limited resources, and as a result of the reduction in work force described below, we do not expect to initiate our pivotal Phase 2 single-arm clinical trial of MB-106 for the treatment of WM trial in 2024. Subject to available funds, we intend rely on third party service providers to conduct study and manufacturing services to advance our priority potential product candidates.

Also in the first quarter of 2024, we completed enrollment of the indolent lymphoma arm in our multicenter Phase 1 trial. The tenth and final patient enrolled was a patient with follicular lymphoma (FL) who achieved a complete response following treatment with  $1 \times 10^7$  CAR-T cells/kg. As a result, the overall complete response rate for FL in the Phase 1 portion of this trial was sustained at 100% (N=6), with no occurrence of CRS above grade 1 and no ICANS of any grade, despite not using prophylactic tocilizumab or dexamethasone.

In March 2024, we announced plans to collaborate with Fred Hutch for a proof-of-concept Phase 1 investigator-sponsored clinical trial evaluating MB-106 in autoimmune diseases.

In March 2024, we were granted the Regenerative Medicine Advanced Therapy (“RMAT”) designation by the FDA for the treatment of relapsed or refractory CD20 positive WM and FL, based on potential improvement in response as seen in clinical data-to-date. Drugs eligible for RMAT designation are those intended to treat, modify, reverse or cure a serious or life-threatening disease or condition, and that present preliminary clinical evidence indicating the drug has the potential to address unmet medical needs for such disease or condition. RMAT designation provides regenerative medicine advanced therapy products with the same benefits to expedite the development and review of a marketing application that are available to drugs that receive Breakthrough Therapy Designation. These advantages include timely advice and interactive communications with FDA, as well as proactive and collaborative involvement by senior FDA managers and experienced review and regulatory health project management staff. A product designated as an RMAT also may be eligible for other FDA-expedited programs, such as Priority Review. The FDA also may conduct a rolling review of products in its expedited programs, reviewing portions of a marketing application before the complete application is submitted.

#### MB-109: Combination MB-101(IL13R $\alpha$ 2 CAR T Cell Program for Glioblastoma) and MB-108 (HSV-1 oncolytic virus C134) as a Potential Treatment for IL13R $\alpha$ 2+ Relapsed or Refractory Glioblastoma (GBM) and High-Grade Astrocytoma

An attractive novel approach to control glioblastoma is adoptive cellular immunotherapy utilizing CAR T cells. CAR T cells can be engineered to recognize very specific antigenically distinct tumor populations and to migrate through the brain parenchyma to kill malignant cells. In addition, oncolytic viruses (“OVs”) have been developed to effectively infect and kill cancer cells in the tumor, as well as modify the microenvironment to increase tumor immunogenicity and immune cell trafficking within the tumor. Due to these properties, OVs have been studied in combination with other treatments to enhance the effectiveness of immunotherapies.

Preliminary anti-tumor activity has been observed in clinical studies administering the OV (MB-108) and CAR T cell therapy (MB-101) as single agents; however, the combination has not yet been explored. To determine if the combination of both therapies will result in a synergistic effect, investigators from COH developed preclinical studies in orthotopic GBM models in nude mice. Dr. Christine Brown from City of Hope presented these preclinical studies at the American Association for Cancer Research 2022 Annual Meeting. It was observed that co-treatment with HSV-1 OV and IL13R $\alpha$ 2-directed CAR-T cells resulted in no additional adverse events beyond those seen with the individual therapies, and, more notably, that pre-treatment with HSV-1 OV re-shaped the tumor microenvironment by increasing immune cell infiltrates and enhanced the efficacy of sub-therapeutic doses of IL13R $\alpha$ 2-directed CAR-T cell therapy delivered either intraventricularly or intratumorally. These preclinical studies aimed to provide a deeper understanding of this combination approach to support the potential benefit of a combination study that will evaluate HSV-1 OV (MB-108) and IL13R $\alpha$ 2-directed CAR-T cells (MB-101).

In October 2023, we received a safe-to-proceed “approval” from the FDA for our MB-109 IND application allowing us to initiate a Phase 1, open-label, non-randomized, multicenter study of MB-109 in patients with IL13R $\alpha$ 2+ recurrent GBM and high-grade astrocytoma. In this Phase 1 clinical study, we intend to evaluate the combination of CAR-T cells (MB-101) and the herpes simplex virus type 1 oncolytic virus (MB-108) in patients with IL13R $\alpha$ 2+ high-grade gliomas. The design of this study involves first a lead in cohort, wherein patients are treated with MB-101 alone without prior MB-108 administration. After successful confirmation of the safety profile of MB-101 alone, the study will then investigate increasing doses of intratumorally administered MB-108 followed by dual intratumoral (ICT) and intraventricular (ICV) administration of MB-101. Due to limited resources, we do not currently expect to initiate this study until such time, if any, that additional resources become available to us.

#### MB-101 (IL13R $\alpha$ 2 CAR T Cell Program for Glioblastoma)

GBM is the most common brain and central nervous system (“CNS”) cancer, accounting for approximately 49.1% of malignant primary brain and CNS tumors, approximately 54% of all gliomas, and approximately 16% of all primary brain and CNS tumors. More than 14,490 new GBM cases were predicted to be diagnosed in the U.S. for 2023. Malignant brain tumors are the second leading cause of cancer-related deaths in adolescents and young adults aged 15-39 and the most common cancer occurring among 15-19-year-olds in the U.S. While GBM is a rare disease 2-3 cases per 100,000 persons per year in the U.S. and European Union (“EU”), it is quite lethal, with five-year survival rate historically under 10%, which has been virtually unchanged for decades. Standard of care therapy consists of maximal surgical resection, radiation, and chemotherapy with temozolomide, which, while rarely curative, is shown to extend median overall survival from 4.5 to 15 months. GBM remains difficult to treat due to the inherent resistance of the tumor to conventional therapies.

Immunotherapy approaches targeting brain tumors offer promise over conventional treatments. IL13R $\alpha$ 2 is an attractive target for CAR T therapy, as it has limited expression in normal tissue but is overexpressed on the surface of greater than 50% of GBM tumors. CAR-T cells are designed to express membrane-tethered IL-13 receptor ligand (“IL-13”) mutated at a single site (glutamic acid at position 13 to a tyrosine; E13Y) with high affinity for IL13R $\alpha$ 2 and reduced binding to IL13R $\alpha$ 1 in order to reduce healthy tissue targeting (Kahlon KS *et al. Cancer Research*. 2004;64:9160-9166).

We are developing an optimized CAR-T product incorporating enhancements in CAR-T design and T cell engineering to improve antitumor potency and T cell persistence. These include a second-generation hinge-optimized CAR containing mutations in the IgG4 linker to reduce off-target Fc interactions (Jonnalagadda M *et al. Molecular Therapy*. 2015;23(4):757-768.), a 4-1BB (CD137) co-stimulatory signaling domain for improved survival and maintenance of CAR T cells, and the extracellular domain of CD19 as a selection/tracking marker. In order to further improve persistence, either central memory T-cells (T<sub>CM</sub>) or enriched CD62L+ naïve and memory T cells (T<sub>N/MEM</sub>) are isolated and enriched. Our manufacturing process limits *ex vivo* expansion, which is designed to reduce T cell exhaustion and maintain a T<sub>CM</sub> or T<sub>N/MEM</sub> phenotype. Based on experiments with CAR-Ts in mouse xenograft models of GBM, these CAR-modified T<sub>CM</sub> and T<sub>N/MEM</sub> cells have been shown to be more potent and persistent than earlier generations of CAR-T cells.

Our academic partners at COH have recently completed the treatment phase of their Phase 1 study, which was designed to assess the feasibility and safety of using  $T_M$  or  $T_{N/MEM}$  enriched IL13R $\alpha$ 2-specific CAR-engineered T cells for clinical study participants with IL13R $\alpha$ 2 recurrent/refractory malignant glioma (ClinicalTrials.gov Identifier: NCT02208362). In this study, COH enrolled and treated 65 patients, with 58 patients receiving 3 cycles of CAR T cells per the study protocol. MB-109: Combination MB-101(IL13R $\alpha$ 2 CAR T Cell Program for Glioblastoma) and MB-108 (HSV-1 oncolytic virus C134) as a Potential Treatment for IL13R $\alpha$ 2+ Relapsed or Refractory Glioblastoma (GBM) and High-Grade Astrocytoma. Preliminary data indicated that the CAR-T cells were well tolerated, and no dose-limiting toxicities were observed in any of the study arms nor where there any occurrences of CRS or treatment-related deaths. Of the 58 patients evaluable for disease response, 50% achieved stable disease (SD) or better; 22%, including 8 patients with grade 4 gliomas, achieved SD or better for at least 90 days. Two patients achieved partial response, and one patient achieved complete response on the study. In 2016 COH reported that a patient had achieved a complete response to treatment based on the imaging and clinical features set forth by the Response Assessment in Neuro-Oncology Criteria (“RANO”). This result was published as a case report in the *New England Journal of Medicine* (Brown CE et al. *NEJM*. 2016;375:2561-9). As described in the paper, this patient diagnosed with recurrent multifocal glioblastoma received multiple infusions of IL13R $\alpha$ 2-specific CAR-T cells over 220 days through two intracranial delivery routes – infusions into the resected tumor cavity followed by infusions into the ventricular system. Intracranial infusions of IL13R $\alpha$ 2-targeted CAR-T cells were not associated with any toxic effects of grade 3 or higher. After CAR-T cell treatment, regression of all intracranial and spinal tumors was observed, along with corresponding increases in levels of cytokines and immune cells in the cerebrospinal fluid. This clinical response was sustained for 7.5 months after the initiation of CAR T-cell therapy; however, the patient’s disease eventually recurred at four new locations that were distinct and non-adjacent to the original tumors, and biopsy of one of these lesions showed decreased expression of IL13R $\alpha$ 2.

Results from this COH study have laid the foundation for potentially three new MB-101 studies listed below. Due to limited resources, we do not expect to initiate these studies until such time, if any, that additional resources become available to us.

1. MB-101 with or without nivolumab and ipilimumab in treating patients with recurrent or refractory glioblastoma (currently enrolling patients; ClinicalTrials.gov Identifier: NCT04003649) sponsored by COH;
2. MB-101 in treating patients with recurrent or refractory glioblastoma with a substantial component of leptomeningeal disease (currently enrolling patients; ClinicalTrials.gov Identifier: NCT04661384) sponsored by COH;
3. MB-101 in combination with the herpes simplex virus type 1 oncolytic virus (MB-108) in treating patients with recurrent or refractory glioblastoma or high-grade astrocytoma, as described above. This combination therapy, to be administered in a phase 1 two-center trial under our IND, will be referred to as MB-109.

#### MB-108 (HSV 1 oncolytic virus C134)

MB-108 is a next-generation oncolytic herpes simplex virus (“oHSV”) that is conditionally replication competent; that is, it can replicate in tumor cells, but not in normal cells, thus killing the tumor cells directly through this process. Replication of C134 in the tumor itself not only kills the infected tumor cells but causes the tumor cell to act as a factory to produce new virus. These virus particles are released as the tumor cell dies and can then proceed to infect other tumor cells in the vicinity and continue the process of tumor kill. In addition to this direct oncolytic activity, the virus promotes an immune response against surviving tumor cells, which increases the antitumor effect of the therapy. The virus expresses a gene from another virus from the same overall virus family, human cytomegalovirus, which allows it to replicate better in the tumor cells than its first-generation predecessors. However, the virus has also been genetically engineered to minimize the production of any toxic effects for the patient receiving the therapy.

To improve this virus over its first-generation predecessors, modifications have focused on improving viral replication and spread within the tumor bed and on enhancing bystander damage to uninfected tumor cells. These effects cumulatively should result in converting an immunologically cold tumor to an immunologically hot tumor, which we anticipate will increase the efficacy of our IL13R $\alpha$ 2 directed CAR T for the treatment of GBM and high-grade astrocytoma.

The O’Neal Comprehensive Cancer Center at the UAB is the single clinical trial site for the Phase 1 trial of MB-108, and this site has initiated a Phase 1 trial that began enrolling patients in 2019 (ClinicalTrials.gov Identifier: NCT03657576). The primary objective of this study is to determine the safety and tolerability of a single dose of MB-108 administered via a stereotactic intracerebral injection and to determine the maximally tolerated dose (“MTD”) of the oncolytic virus. Secondary objectives are to obtain preliminary information about the potential benefit of MB-108 in the treatment of patients with recurrent malignant gliomas, including relevant data on markers of efficacy, including time to tumor progression and patient survival. As of April 2023, 9 patients had been enrolled in this study.

#### ***In Vivo CAR T Platform Technology***

We are collaborating with the Mayo Clinic to develop a novel technology that may be able to transform the administration of CAR T therapies and potentially be used as an off-the-shelf therapy. The technology, developed by Larry R. Pease, Ph.D., principal investigator and former director of the Center for Immunology and Immune Therapies at Mayo Clinic, is a new platform to administer CAR T therapy using a two-step approach. First, a peptide is administered to the patient to drive the proliferation of the patient’s resident T cells. This is followed by the administration of a viral CAR construct directly into the lymph nodes of the patient. In turn, the viral construct infects the activated T cells and effectively forms CAR T cells in vivo in the patient. Successful implementation may lead to an off-the-shelf product with no need to isolate and expand patient T cells ex vivo in a cell processing facility.

Preclinical proof-of-concept has been established, and the ongoing development of this technology will take place at Mayo Clinic. We are evaluating plans to file an IND application for a multicenter Phase 1 clinical trial once a lead construct has been identified, subject to allocation of resources.

#### **Recent Developments**

##### *Sale of Manufacturing Facility – Overview of Transaction*

On May 18, 2023, we entered into an Asset Purchase Agreement (the “Original Asset Purchase Agreement”) with uBriGene (Boston) Biosciences, Inc., a Delaware corporation (“uBriGene”), pursuant to which we agreed to sell our leasehold interest in our cell processing facility located in Worcester, Massachusetts (the “Facility”), and associated assets relating to the manufacturing and production of cell and gene therapies at the Facility to uBriGene (the “Transaction”). We and uBriGene subsequently entered into Amendment No. 1, dated as of June 29, 2023, and Amendment No. 2, dated as of July 28, 2023, to the Original Asset Purchase Agreement (the Original Asset Purchase Agreement, as so amended, the “Asset Purchase Agreement”).

On July 28, 2023 (the “Closing Date”), pursuant to the Asset Purchase Agreement, we completed the sale of all of our assets that primarily relate to the manufacturing and production of cell and gene therapies at the Facility (such operations, the “Transferred Operations” and such assets, the “Transferred Assets”) to uBriGene for upfront consideration of \$6 million cash (the “Base Amount”). The Transferred Assets that were transferred to uBriGene on the Closing Date include, but are not limited to: (i) our leases of equipment and other personal property and all other property, equipment, machinery, tools, supplies, inventory, fixtures and all other personal property primarily related to the Transferred Operations, (ii) the data, information, methods, quality management systems, and intellectual property primarily used for the purposes of the Transferred Operations, (iii) the records and filings, including customer and vendor lists, production data, standard operating procedures and business records relating to, used in or arising under the Transferred Operations and (iv) all transferrable business license, permits and approvals necessary to operate the Transferred Operations. As described in greater detail below, certain Transferred Assets, including our lease of the Facility and contracts that are primarily used in the Transferred Operations (the “Transferred Contracts”) did not transfer to uBriGene on the Closing Date.

Under the terms of the Asset Purchase Agreement, in addition to the Base Amount, uBriGene will be obligated to pay us a contingent amount (the “Contingent Amount”) if we, within two years from the Closing Date: (i) complete an issuance of equity securities in an aggregate amount equal to or greater than \$10.0 million after the closing (the “Contingent Capital Raise”) and (ii) obtain the consent of the landlord of the Facility to transfer the lease of the Facility to uBriGene. As of December 31, 2023, we had completed issuances of equity securities for proceeds totaling approximately \$4.6 million following the Closing Date. If we are unable to close the full amount of the Contingent Capital Raise and/or do not receive the Landlord’s consent to the transfer the lease of the Facility to uBriGene within two years from the Closing Date, uBriGene will not be obligated to pay the Contingent Amount to us. The Contingent Amount to be paid to us upon the satisfaction of the conditions listed above will be an amount equal to \$5.0 million less (i) any severance payments or other monetary obligations to our employees who support the Transferred Operations and who have accepted offers of employment with uBriGene that arise between the Closing Date and the date the lease transfers to uBriGene and (ii) any payments payable by us under Transferred Contracts in connection with the consummation of the Transaction, including any payments necessary to obtain third party consents.

#### *Voluntary Notice to U.S. Committee on Foreign Investment in the United States*

uBriGene is an indirect, wholly owned subsidiary of UBriGene (Jiangsu) Biosciences Co., Ltd., a Chinese contract development and manufacturing organization. Under the Asset Purchase Agreement, we and uBriGene agreed to use our reasonable best efforts to obtain clearance for the Transaction from the U.S. Committee on Foreign Investment in the United States (“CFIUS”), although obtaining such clearance was not a condition to closing the Transaction. In accordance with the Asset Purchase Agreement, we and uBriGene previously submitted a voluntary notice to CFIUS on August 10, 2023.

Following an initial 45-day review period and subsequent 45-day investigation period, on November 13, 2023, CFIUS requested that we and uBriGene withdraw and re-file our joint voluntary notice to allow more time for review and discussion regarding the nature and extent of national security risk posed by the Transaction. Upon CFIUS’s request, we and uBriGene submitted a request to withdraw and re-file our joint voluntary notice to CFIUS, and on November 13, 2023, CFIUS granted this request, accepted the joint voluntary notice and commenced a new 45-day review period on November 14, 2023. CFIUS’s 45-day review ended on December 28, 2023. Since CFIUS had not concluded its review by December 28, 2023, the proceeding transitioned to a subsequent 45-day investigation period, which ended on February 12, 2024.

Following the 45-day review period and subsequent 45-day investigation period described above, on February 12, 2024, we and uBriGene requested permission to withdraw and re-file our joint voluntary notice to allow more time for review and discussion regarding the nature and extent of national security risk posed by the Transaction. Upon our joint request to withdraw and re-file their joint voluntary notice to CFIUS, on February 12, 2024, CFIUS granted this request, accepted the joint voluntary notice and commenced a new 45-day review period on February 13, 2024. CFIUS’s new 45-day review ended on March 28, 2024. Because CFIUS had not yet concluded its action, the proceeding transitioned to a second 45-day phase as CFIUS further investigates the Transaction. On March 28, 2024, CFIUS advised us that its investigation will be completed no later than May 13, 2024.

At the completion of its review and, if applicable, investigation, if CFIUS determines there are no unresolved national security concerns, CFIUS will apprise the parties of its determination and conclude all action on the matter. Alternatively, CFIUS may identify and impose mitigation measures. Depending on the nature and severity of perceived national security risks identified, CFIUS may, among other mitigation measures, require suspension of the Transaction, require uBriGene to divest the Facility or other assets relating thereto, forfeit contracts that CFIUS deems to be sensitive, or require appointment of special compliance personnel or a proxy board consisting of U.S. persons. If CFIUS determines to require mitigating measures with respect to the Transaction, then uBriGene must comply with such measures although the Closing Date has already occurred.

We and uBriGene have been and will continue to be actively engaged with CFIUS, and they remain fully committed to obtaining clearance from CFIUS and completing the full transfer of the Facility to uBriGene. There can be no assurance, however, that CFIUS will ultimately provide clearance with respect to the Transaction, or what mitigating measures may be required in order to obtain such clearance.

#### *Notification of Non-Compliance with Nasdaq Continued Listing Requirements*

On March 13, 2024, we received a deficiency letter (the “Letter”) from the Listing Qualifications Department (the “Staff”) of Nasdaq notifying us that we were not in compliance with the minimum stockholders’ equity requirement for continued listing on the Nasdaq Capital Market under Nasdaq Listing Rule 5550(b)(1). Nasdaq Listing Rule 5550(b)(1) requires companies listed on The Nasdaq Capital Market to maintain stockholders’ equity of at least \$2,500,000 (the “Stockholders’ Equity Requirement”). Our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, reported stockholders’ equity of \$123,000. The Letter further noted that as of its date, we did not have a market value of listed securities of \$35 million, or net income from continued operations of \$500,000 in the most recently completed fiscal year or in two of the last three most recently completed fiscal years, the alternative quantitative standards for continued listing on the Nasdaq Capital Market.

The Letter has no immediate effect on our continued listing on the Nasdaq Capital Market, subject to our compliance with the other continued listing requirements. In accordance with Nasdaq rules, we have been provided 45 calendar days, or until April 29, 2024, to submit a plan to regain compliance (the “Compliance Plan”). If the Compliance Plan is acceptable to the Staff, it may grant an extension of 180 calendar days from the date of the Letter. If the Staff does not accept the Compliance Plan, the Staff will provide written notification to us that the Compliance Plan has been rejected. At that time, we may appeal the Staff’s determination to a Nasdaq Hearings Panel.

We intend to submit a Compliance Plan on or before April 29, 2024. Further, we intend to take all reasonable measures available to regain compliance under the Nasdaq Listing Rules and remain listed on the Nasdaq Capital Market. However, there can be no assurance that Nasdaq will approve the Compliance Plan or that we will ultimately regain compliance with all applicable requirements for continued listing.

#### *April 2024 Reduction in Work Force*

On April 10, 2024, our board of directors approved a reduction of our workforce by approximately 81% of our employee base in order to reduce costs and preserve capital due to the fundraising environment and continued uncertainty regarding the CFIUS review of the sale of the Facility and the Transaction with uBriGene. The workforce reduction will take place primarily in April 2024 and is expected to be substantially completed in the second quarter of 2024. As a result of these actions, we expect to incur personnel-related restructuring charges of approximately \$0.2 million in connection with one-time employee termination cash expenditures, which are expected to be incurred in the second quarter of 2024. We may also incur other charges or cash expenditures not currently contemplated due to events that may occur as a result of, or associated with, the workforce reduction or retention efforts. The estimates of the costs expected to be incurred, and the timing thereof, are subject to various assumptions and actual costs may differ. We and our board of directors continue to evaluate all strategic and other alternatives related to the business.



Due to limited resources, and as a result of the reduction in work force described above, we do not expect to initiate our pivotal Phase 2 single-arm clinical trial of MB-106 for the treatment of WM trial in 2024. Subject to available funds, we intend rely on third party service providers to conduct study and manufacturing services to advance our priority potential product candidates.

#### *Preliminary First Quarter Results*

Based on information currently available, we estimate that as of March 31, 2024, cash and cash equivalents were approximately \$1.3 million and cash used in operating activities for the first quarter of 2024 was \$5.3 million.

Our estimate of our cash and cash equivalents as of March 31, 2024 and cash used in operating activities for the first quarter of 2024 are preliminary and actual results may differ from these estimates due to the completion of our closing procedures with respect to the three months ended March 31, 2024, final adjustments and other developments that may arise between now and the time the financial results for the three months ended March 31, 2024 are finalized. As such, these estimates should not be viewed as a substitute for our unaudited financial statements for the three months ended March 31, 2024 prepared in accordance with U.S. generally accepted accounting principles. Our expected results could change materially and are not necessarily indicative of the results to be achieved for three months ended March 31, 2024 or any future period. As a result of the foregoing considerations and the other limitations described herein, investors are cautioned not to place undue reliance on this preliminary financial information. We do not undertake any obligation to publicly update or revise these estimates, except as required by law.

#### **Risks Associated with the Company and this Offering**

This offering is subject to numerous risks and uncertainties, including those highlighted in the section entitled “Risk Factors” immediately following this prospectus summary. These risks include, but are not limited to, the following:

- You will experience immediate dilution in the book value per share of the common stock purchased in the offering.
- If you purchase our securities in this offering you may experience future dilution as a result of future equity offerings or other equity issuances.
- A substantial number of shares of common stock may be sold in the market following this offering, which may depress the market price for our common stock.
- We have broad discretion to determine how to use the funds raised in this offering and may use them in ways that may not enhance our operating results or the price of our common stock.
- There is no public market for the Warrants and pre-funded warrants being offered in this offering.
- The holders of Warrants and pre-funded warrants purchased in this offering will have no rights as common stockholders until such holders exercise their Warrants and pre-funded warrants and acquire shares of our common stock, except as set forth in the Warrants and pre-funded warrants.
- The Warrants are speculative in nature.
- The Warrants are not exercisable until stockholder approval, provided however, if the Pricing Conditions are met, the Warrants will be exercisable upon issuance.
- The market price for our common stock has been volatile and may continue to fluctuate or may decline significantly in the future.
- This is a best efforts offering, no minimum amount of securities is required to be sold, and we may not raise the amount of capital we believe is required for our business plans, including our near-term business plans.

#### **Corporate Information**

We are a majority-controlled subsidiary of Fortress Biotech, Inc. We were incorporated under the laws of the State of Delaware on March 13, 2015. Our principal executive offices are located at 377 Plantation Street, Worcester, Massachusetts 01605, and our telephone number is 781-652-4500. We maintain a website on the Internet at [www.mustangbio.com](http://www.mustangbio.com) and our e-mail address is [info@mustangbio.com](mailto:info@mustangbio.com). Information on our website, or any other website, is not incorporated by reference in this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

#### **Implications of Being a Smaller Reporting Company**

We are a smaller reporting company as defined in the Securities Exchange Act of 1934, as amended (the “Exchange Act”). We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as (i) the market value of our voting and non-voting common stock held by non-affiliates is less than \$250 million measured on the last business day of our second fiscal quarter or (ii) our annual revenue is less than \$100 million during the most recently completed fiscal year and the market value of our voting and non-voting common stock held by non-affiliates is less than \$700 million measured on the last business day of our second fiscal quarter. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our annual reports on Form 10-K and have reduced disclosure obligations regarding executive compensation, and if we are a smaller reporting company with less than \$100 million in annual revenue, we would not be required to obtain an attestation report on internal control over financial reporting issued by our independent registered public accounting firm.

**Securities we are offering**

Up to 15,625,000 shares of common stock and accompanying Series A-1 Warrants to purchase up to 15,625,000 shares of common stock, Series A-2 Warrants to purchase up to 15,625,000 shares of common stock, and Series A-3 Warrants to purchase up to 15,625,000 shares of common stock, or pre-funded warrants to purchase 15,625,000 shares of common stock and accompanying Series A-1 Warrants to purchase up to 15,625,000 shares of common stock, Series A-2 Warrants to purchase up to 15,625,000 shares of common stock, and Series A-3 Warrants to purchase up to 15,625,000 shares of common stock, or pre-funded warrants, and in each case the accompanying Series A-1 Warrants, Series A-2 Warrants, and Series A-3 Warrants will be separately transferable immediately upon issuance, but the shares of common stock, or pre-funded warrants, and in each case the accompanying Warrants will be issued to purchasers in the ratio of one to one.

**Description of Series A-1 Warrants, Series A-2 Warrants, and Series A-3 Warrants**

Each Series A-1 Warrant, Series A-2 Warrant, and Series A-3 Warrant is exercisable for one share of common stock, will have an exercise price of \$0.32 per share, and will be exercisable beginning on the effective date of the Warrant Stockholder Approval, provided however, if the Pricing Conditions are met, the Warrants will be exercisable upon issuance (the "Initial Exercise Date"). The Series A-1 Warrants will expire on the five-year anniversary of the Initial Exercise Date. The Series A-2 Warrants will expire on the twenty four month anniversary of the Initial Exercise Date. The Series A-3 Warrants will expire on the nine month anniversary of the Initial Exercise Date.

**Description of pre-funded warrants**

If the issuance of shares of our common stock to a purchaser in this offering would result in such purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock following the consummation of this offering or if such purchaser otherwise elects to purchase pre-funded warrants, then such purchaser may purchase, if they so choose, in lieu of the shares of our common stock that would result in such excess ownership, a pre-funded warrant to purchase shares of our common stock for a purchase price per share of common stock subject to such pre-funded warrant equal to the per share public offering price for the common stock to be sold in this offering less \$0.0001. Each pre-funded warrant will have an exercise price of \$0.0001 per share, will be exercisable upon issuance and may be exercised at any time until all of the pre-funded warrants are exercised in full. Purchasers of pre-funded warrants will also receive accompanying warrants as if such purchasers were buying shares of our common stock in this offering. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of these pre-funded warrants.

**Common stock outstanding before offering:**

10,509,505 shares

**Common stock outstanding after this offering**

26,134,505 shares of common stock, assuming no sale of pre-funded warrants in this offering and no exercise of the Warrants being issued in this offering and an assumed combined public offering price of \$0.32 per share and accompanying Warrants, which is equal to the last reported sale price per share of our common stock on the Nasdaq Capital Market on April 26, 2024.

**Use of proceeds:**

We currently intend to use the net proceeds from this offering for working capital, pipeline development activities and general corporate purposes. See "Use of Proceeds" on page 25 of this prospectus.

**Term of the offering**

This offering will terminate on May 13, 2024, unless we decide to terminate the offering (which we may do at any time in our discretion) prior to that date.

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**Risk factors**

An investment in our securities involves a high degree of risk and could result in a loss of your entire investment. Prior to making an investment decision, you should carefully consider all of the information in this prospectus and, in particular, you should evaluate the risk factors set forth under the caption "Risk Factors" beginning on page 19.

**Nasdaq Capital Market symbol**

Our common stock is listed on the Nasdaq Capital Market under the symbol "MBIO".

There is no established public trading market for the Warrants and pre-funded warrants, and we do not expect a market to develop. We do not intend to apply for listing of the Warrants or pre-funded warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Warrants and pre-funded warrants will be limited.

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The number of shares of our common stock to be outstanding after this offering is based on 10,509,505 shares of our stock outstanding as of April 25, 2024 and excludes:

- 76,112 shares of our common stock issuable upon the exercise of outstanding stock options as of April 25, 2024, with a weighted-average exercise price of \$85.95 per share;
- 23,501 shares of common stock issuable upon the vesting and settlement of outstanding restricted stock units as of April 25, 2024;
- 2,813,632 shares of our common stock issuable upon the exercise of outstanding warrants as of April 25, 2024, with a weighted-average exercise price of \$2.14 per share;
- 56,359 shares of our common stock issuable upon conversion of the Class A Common Stock, at the holders' election;
- 16,666 shares of our common stock issuable upon conversion of the Class A Preferred Stock, at the holders' election;

- 393,167 shares of our common stock reserved for future issuance under the Mustang Bio, Inc. 2016 Equity Incentive Plan, as amended (the “2016 Plan”), plus any future increases in the number of shares of common stock reserved for issuance thereunder; and
- 338,315 shares of our common stock reserved for future issuance under the Mustang Bio, Inc. 2019 Employee Stock Purchase Plan, as amended (the “ESPP”), plus any future increases, including annual automatic evergreen increases, in the number of shares of common stock reserved for issuance thereunder.

Unless otherwise indicated, all information contained in this prospectus assumes:

- no exercise of the outstanding options, warrants, or pre-funded warrants, and no settlement of the restricted stock units described in the bullets above;
- no exercise of the Warrants or the Placement Agent Warrants issued in this offering; and
- no sale of pre-funded warrants in this offering.

## RISK FACTORS

*Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, and those discussed under the section entitled “Risk Factors” contained in our [Annual Report on Form 10-K for the year ended December 31, 2023](#) together with other information in this prospectus, the information and documents incorporated by reference herein, and in any free writing prospectus that we have authorized for use in connection with this offering. The occurrence of any of the events or developments described below could materially and adversely affect our business, financial condition, results of operations and prospects. In such an event, the market price of our common stock could decline and you may lose all or part of your investment.*

### **Risks Related to the Company and this Offering**

***There is substantial doubt regarding our ability to continue as a going concern. We will need to raise additional funding, (which may not be available on acceptable terms to us, or at all) and/or delay, limit or terminate our product development efforts or other operations.***

We are currently advancing our programs in hematologic cancers, solid tumors and rare genetic diseases through clinical development. Developing and commercializing CAR T and gene therapy products is expensive, and we do not expect to generate meaningful product revenues in the foreseeable future until we obtain marketing approval for products in the United States and following any potential commercial launch.

As of December 31, 2023, our cash and cash equivalents were \$6.2 million. Based on our current business plan, there is substantial doubt regarding our ability to continue as a going concern for a period of one year after the date that our financial statements for the year ended December 31, 2023 were issued. Our fundraising efforts to raise additional funding may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our potential products following marketing approval if and when obtained. In addition, we cannot guarantee that financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. Potential indebtedness, if incurred, would result in increased fixed payment obligations, and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

In addition, in order to address our current funding constraints, we may be required to further revise our business plan and strategy, which may result in us (i) further curtailing, delaying or discontinuing one or more of our research or development programs or the commercialization of any product candidates, (ii) selling certain of our assets and/or (iii) may result in our being unable to expand our operations or otherwise capitalize on our business opportunities. Such actions may become necessary whether or not we are able to raise additional capital. As a result, our business, financial condition, and results of operations could be materially affected.

***We believe that the proceeds of this offering, combined with our very limited funds currently on hand, will only be sufficient for us to operate for a relatively limited amount of time. Since we will be unable to generate sufficient funds, if any, to fund our operations for at least several years, we will need to seek additional equity or debt financing to provide the capital required to implement our business plan. If we are unable to raise capital, we could be required to seek bankruptcy protection or other alternatives that would likely result in our securityholders losing some or all of their investment in us.***

We believe that the proceeds of this offering, combined with our very limited funds currently on hand, will only be sufficient for us to operate for a relatively limited amount of time. Since we will be unable to generate sufficient, if any, revenue or cash flow to fund our operations for at least several years, we will need to seek additional equity or debt financing to provide the capital required to implement our business plan.

Additionally, this offering is being made on a best efforts basis and we may sell fewer than all of the securities offered hereby and may receive significantly less in net proceeds from this offering, which will provide us only limited working capital. Assuming that we receive net proceeds of approximately \$4.5 million from this offering (assuming an offering with gross proceeds of \$5 million), we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will meet our capital needs for the next six to nine months under our current business plan. Without giving effect to the receipt of any proceeds from this offering, we currently estimate that our existing cash and cash equivalents are sufficient to fund business operations into the second quarter of 2024.

We do not currently have any arrangements or credit facilities in place as a source of funds. There can be no assurance that we will be able to raise sufficient additional capital on acceptable terms, or at all. If such financing is not available on satisfactory terms, or is not available at all, we may be required to further delay, scale back or eliminate the development of business opportunities and our operations and financial condition may be materially adversely affected. Furthermore if we are unable to raise capital, we could be required to seek bankruptcy protection or other alternatives that would likely result in our securityholders losing some or all of their investment in us.

***We contract with third parties for the manufacture of our product candidates for preclinical and clinical testing and may also do so for commercialization, if and when our product candidates are approved. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or any future product candidate or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.***

Due to limited resources, and in light of our reduction in force in April 2024, we may increase our reliance on third-party manufacturers or third-party collaborators for the manufacture of commercial supply of one or more product candidates for which our collaborators or we obtain marketing approval. We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including, but not necessarily limited to:

- reliance on the third party for regulatory compliance and quality assurance, while still being required by law to establish adequate oversight and control over products furnished by that third party;

- the possible breach of the manufacturing agreement by the third party;
- manufacturing delays if our third-party manufacturers are unable to obtain raw materials due to supply chain disruptions, give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreement between us;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

We rely on our third-party manufacturers to produce or purchase from third-party suppliers the materials and equipment necessary to produce our product candidates for our preclinical and clinical trials. Forces beyond our control could disrupt the global supply chain and impact our or our third-party manufacturers' ability to obtain raw materials or other products necessary to manufacture our product candidates. There are a limited number of suppliers for raw materials and equipment that we use (or that are used on our behalf) to manufacture our product candidates, and there may be a need to assess alternate suppliers to prevent a possible disruption of the manufacture of the materials and equipment necessary to produce our product candidates for our preclinical and clinical trials, and if approved, ultimately for commercial sale. We do not have any control over the process or timing of the acquisition of these raw materials or equipment by our third-party manufacturers. Any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing preclinical or clinical trial due to the need to replace a third-party manufacturer could considerably delay completion of our preclinical or clinical trials, product testing and potential regulatory approval of our product candidates. If our manufacturers or we are unable to purchase these raw materials or equipment after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

The facilities used by contract manufacturers to potentially manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit a New Drug Application (NDA) or BLA to the FDA. We are required by law to establish adequate oversight and control over raw materials, components and finished products furnished by our contract manufacturers, but we do not control the day-to-day manufacturing operations of, and are dependent on, the contract manufacturers for compliance with current Good Manufacturing Practices ("cGMP") regulations for manufacture of our product candidates. Third-party manufacturers may not be able to comply with the cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, restrictions on imports and exports, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products.

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

Future dependence upon others for the manufacture of our product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that may receive marketing approval on a timely and competitive basis. We also expect to rely on third parties to distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, if approved, producing additional losses and depriving us of potential product revenue.

***You will experience immediate dilution in the book value per share of the common stock purchased in the offering.***

Since the public offering price of our common stock in this offering is substantially higher than the net tangible book value per share of our outstanding common stock outstanding prior to this offering, you will suffer dilution in the book value of the common stock you purchase in this offering. The shares of common stock sold in this offering, if any, will be sold from time to time at various prices. After giving effect to the sale of our common stock in the aggregate offering amount of \$5.0 million at an assumed offering price of \$0.32 per share (the last reported sale price of our common stock on the Nasdaq Capital Market on April 26, 2024), and after deducting estimated offering commissions and expenses payable by us, you would suffer immediate dilution of \$0.13 per share in the net tangible book value of the common stock. See the section titled "Dilution" for a more detailed discussion of the dilution you will incur if you purchase shares in this offering.

***If you purchase our securities in this offering you may experience future dilution as a result of future equity offerings or other equity issuances.***

We will likely offer and issue additional shares of our common stock or other equity or convertible debt securities in order to raise additional capital. Future equity offerings or other equity issuances may be at a price per share that is equal to or greater than the price per share paid by investors in this offering. Future investors in such offerings may have rights superior to existing stockholders, and the price per share at which we sell additional shares of common stock or other equity or convertible debt securities in future transactions may be at a higher or lower price per share than the price per share in this offering.

***A substantial number of shares of common stock may be sold in the market following this offering, which may depress the market price for our common stock.***

The securities offered hereby will be freely tradable without restriction or further registration under the Securities Act of 1933, as amended (the "Securities Act"). Sales of a substantial number of shares of our common stock in the public market following this offering, or the perception that such sales could occur, could cause the market price of our common stock to decline.

***We have broad discretion to determine how to use the funds raised in this offering and may use them in ways that may not enhance our operating results or the price of our common stock.***

Our management will have broad discretion over the use of net proceeds from this offering, and we could spend the net proceeds from this offering in ways our stockholders may not agree with or that do not yield a favorable return, if at all. We currently expect to use the net proceeds from this offering for working capital, pipeline development activities and general corporate purposes, including costs and expenses associated with being a public company. However, our use of these net proceeds may differ substantially from our current plans. If we do not invest or apply the net proceeds of this offering in ways that improve our operating results, we may fail to achieve expected financial results, which could cause our stock price to decline.

Effective June 30, 2020, the SEC implemented Regulation Best Interest requiring that “A broker, dealer, or a natural person who is an associated person of a broker or dealer, when making a recommendation of any securities transaction or investment strategy involving securities (including account recommendations) to a retail customer, shall act in the best interest of the retail customer at the time the recommendation is made, without placing the financial or other interest of the broker, dealer, or natural person who is an associated person of a broker or dealer making the recommendation ahead of the interest of the retail customer.” This is a significantly higher standard for broker-dealers to recommend securities to retail customers than before under FINRA “suitability rules. FINRA suitability rules do still apply to institutional investors and require that in recommending an investment to a customer, a broker-dealer must have reasonable grounds for believing that the investment is suitable for that customer. Prior to recommending securities to their customers, broker-dealers must make reasonable efforts to obtain information about the customer’s financial status, tax status, investment objectives and other information, and for retail customers determine the investment is in the customer’s “best interest” and meet other SEC requirements. Both SEC Regulation Best Interest and FINRA’s suitability requirements may make it more difficult for broker-dealers to recommend that their customers buy speculative, low-priced securities. They may affect investing in our common stock, which may have the effect of reducing the level of trading activity in our securities. As a result, fewer broker-dealers may be willing to make a market in our common stock, reducing a stockholder’s ability to resell our common stock.

***Purchasers who purchase our securities in this offering pursuant to a securities purchase agreement may have rights not available to purchasers that purchase without the benefit of a securities purchase agreement.***

In addition to rights and remedies available to all purchasers in this offering under federal securities and state law, the purchasers that enter into a securities purchase agreement will also be able to bring claims of breach of contract against us. The ability to pursue a claim for breach of contract provides those investors with the means to enforce the covenants uniquely available to them under the securities purchase agreement including, but not limited to: (i) timely delivery of shares; (ii) agreement to not enter into variable rate financings for one year from closing, subject to certain exceptions; (iii) agreement to not enter into any financings for 30 days from closing, subject to certain exceptions; and (iv) indemnification for breach of contract.

***There is no public market for the Warrants and pre-funded warrants being offered in this offering.***

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

***The holders of Warrants and pre-funded warrants purchased in this offering will have no rights as common stockholders until such holders exercise their Warrants or pre-funded warrants and acquire shares of our common stock, except as set forth in the Warrants and pre-funded warrants.***

Until a holder of Warrants and pre-funded warrants acquires the shares of common stock upon exercise of the Warrants and pre-funded warrants, as the case may be, such holder will have no rights with respect to the shares of common stock underlying such Warrants and pre-funded warrants, except as set forth in the Warrants and pre-funded warrants. Upon exercise of the Warrants and pre-funded warrants, holders will be entitled to exercise the rights of common stockholders only as to matters for which the record date occurs after the exercise date.

***The Warrants are speculative in nature.***

The Warrants do not confer any rights of common stock ownership on their holders, such as voting rights, but rather merely represent the right to acquire shares of common stock at a fixed price for a limited period of time. There can be no assurance that the market price of the common stock will ever equal or exceed the exercise price of the Warrants, and consequently, it may not ever be profitable for holders of the Warrants to exercise the Warrants.

***The Warrants are not exercisable until stockholder approval, provided however, if the Pricing Conditions are met, the Warrants will be exercisable upon issuance.***

The Warrants will have an exercise price of \$0.32 per share and will be exercisable beginning on the effective date of the Warrant Stockholder Approval, provided however, if the Pricing Conditions are met, the Warrants will be exercisable upon issuance (the “Initial Exercise Date”). The Series A-1 Warrants will expire on the five-year anniversary of the Initial Exercise Date. The Series A-2 Warrants will expire on the twenty four month anniversary of the Initial Exercise Date. The Series A-3 Warrants will expire on the nine month anniversary of the Initial Exercise Date.

While we intend to promptly seek Warrant Stockholder Approval, there is no guarantee that the Warrant Stockholder Approval will ever be obtained. If we are unable to obtain the Warrant Stockholder Approval, the Warrants may have no value.

***The market price for our common stock has been volatile and may continue to fluctuate or may decline significantly in the future.***

An active, liquid and orderly market for our common stock may not be sustained, which could depress the trading price of our common stock or cause it to continue to be highly volatile or subject to wide fluctuations. Some of the factors that could negatively affect our share price or result in fluctuations in the price or trading volume of our common stock include, among other things:

- the commencement, enrollment, or results of our current and future preclinical studies and clinical trials, and the results of trials of our competitors or those of other companies in our market sector;
- regulatory approval of our product candidates, or limitations to specific label indications or patient populations for its use, or changes or delays in the regulatory review process;
- manufacturing, supply or distribution delays or shortages;
- our ability to identify and successfully acquire or in-license new product candidates on acceptable terms;
- FDA, state or international regulatory actions, including actions on regulatory applications any of our product candidates;
- legislative or regulatory changes;
- judicial pronouncements interpreting laws and regulations;
- changes in government programs;
- announcements of new products, services or technologies, commercial relationships, acquisitions or other events by us or our competitors;
- market conditions in the pharmaceutical and biotechnology sectors;

- fluctuations in stock market prices and trading volumes of similar companies;
- changes in accounting principles;
- litigation or public concern about the safety of our product candidates or similar product candidates;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant shareholders; and
- our ability to obtain additional financing to advance our development operations;

These broad market and industry factors may decrease the market price of our common stock, regardless of our actual operating performance. The stock market in general has from time to time experienced extreme price and volume fluctuations. In addition, in the past, following periods of volatility in the overall market and decreases in the market price of a 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.

*This is a best efforts offering, no minimum amount of securities is required to be sold, and we may not raise the amount of capital we believe is required for our business plans, including our near-term business plans.*

The Placement Agent has agreed to use its reasonable best efforts to solicit offers to purchase the securities in this offering. The Placement Agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. There is no required minimum number of securities that must be sold as a condition to completion of this offering. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, Placement Agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth herein. We may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to support our continued operations, including our near-term continued operations. Thus, we may not raise the amount of capital we believe is required for our operations in the short-term and may need to raise additional funds to complete such short-term operations. Such additional fundraises may not be available on terms acceptable to us, or at all.

#### **SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus, including the information incorporated by reference into this prospectus, contains forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical or current facts included in this prospectus are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "design," "due," "estimate," "expect," "goal," "intend," "may," "objective," "plan," "positioned," "potential," "predict," "seek," "should," "target," "will," "would" and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. In addition, statements that "we believe" or similar statements reflect our beliefs and opinions on the relevant subject. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those expressed in, or implied by these, forward-looking statements and therefore, you should not unduly rely on such statements, including, but not limited to:

- expectations for increases or decreases in expenses;
- expectations for the clinical and pre-clinical development, manufacturing, regulatory approval, and commercialization of our pharmaceutical product candidates or any other products we may acquire or in-license;
- use of clinical research centers and other contractors;
- expectations for incurring capital expenditures to expand our research and development and manufacturing capabilities;
- expectations for generating revenue or becoming profitable on a sustained basis;
- expectations or ability to enter into marketing and other partnership agreements;
- expectations or ability to enter into product acquisition and in-licensing transactions;
- expectations or ability to build our own commercial infrastructure to manufacture, market and sell our product candidates, if approved;
- expectations for the acceptance of our product candidates, if approved, by doctors, patients or payors;
- ability to compete against other companies and research institutions;
- our ability to attract, hire and retain qualified personnel, including the impact of our recently announced reduction in force;
- ability to secure adequate protection for our intellectual property;
- ability to attract and retain key personnel;
- ability to obtain reimbursement for our products, if approved;
- estimates of the sufficiency of our existing cash and cash equivalents and investments to finance our operating requirements, including expectations regarding the value and liquidity of our investments;
- stock price and the volatility of the equity markets;
- expected losses; and
- expectations for future capital requirements.

We have based these forward-looking statements largely on our current expectations, estimates, forecasts, and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, and financial needs. In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus, we cannot guarantee that the future results, levels of activity, performance, or events and circumstances reflected in the forward-looking statements will be achieved or occur at all. You should refer to the section entitled “Risk Factors” in this prospectus and the risk factors set forth in the documents incorporated by reference in this prospectus for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. Except as required by law, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise.

You should read this prospectus and the documents incorporated by reference in this prospectus completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in this prospectus by these cautionary statements.

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#### USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately \$4.5 million, after deducting the Placement Agent’s fees and estimated offering expenses payable by us, and assuming an offering of gross proceeds of \$5 million, no sale of pre-funded warrants in this offering and no exercise of the Warrants being issued in this offering. However, because this is a best efforts offering and there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, the Placement Agent’s fees and net proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth on the cover page of this prospectus.

These estimates exclude the proceeds, if any, from the exercise of Warrants issued in this offering. If all of the Warrants issued in this offering were to be exercised in cash at an exercise price of \$0.32 per share of common stock, we would receive additional proceeds of approximately \$15 million. We cannot predict when or if these Warrants will be exercised. It is possible that these Warrants may expire and may never be exercised. Additionally, the Warrants contain a cashless exercise provision that permit exercise of Warrants on a cashless basis at any time where there is no effective registration statement under the Securities Act covering the issuance of the underlying shares.

We intend to use the net proceeds of this offering for working capital, general corporate purposes and the payment of outstanding payables incurred in the ordinary course. General corporate purposes may include, and are not limited to, research and development costs, manufacturing costs, the acquisition or licensing of other businesses, products or product candidates, working capital and capital expenditures. These expected uses represent our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials, as well as any new collaborations that we may enter into with third parties for our product candidates, the commercialization of our products or our product candidates, if approved, and any unforeseen cash needs. As a result, our management will have broad discretion in the application of the net proceeds from this offering, and the investors will be relying on the judgment of our management regarding the application of the net proceeds from this offering.

Pending application of the net proceeds as described above, we intend to invest the net proceeds of this offering in short-term, investment-grade, interest-bearing securities.

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#### DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock, and we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business.

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#### CAPITALIZATION

The following table sets forth our capitalization as of December 31, 2023 as follows:

- on an actual basis; and
- on an as adjusted basis to reflect the issuance and sale by us of 15,625,000 shares of common stock and accompanying Series A-1 Warrants to purchase up to 15,625,000 shares of common stock, Series A-2 Warrants to purchase up to 15,625,000 shares of common stock, and Series A-3 Warrants to purchase up to 15,625,000 shares of common stock in this offering at an assumed public offering price of \$0.32 per share and accompanying Warrants (the last reported sale price of our common stock on Nasdaq on April 26, 2024) and after deducting Placement Agent fees and estimated offering expenses payable by us, and assuming no sale of any pre-funded warrants in this offering, no exercise of warrants being offered in this offering, that no value is attributed to such warrants and that such warrants are classified as and accounted for as equity.

You should read this table together with “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” as well as our financial statements and related notes and the other financial information appearing in our [Annual Report on Form 10-K for the year ended December 31, 2023](#) which are each incorporated by reference in this prospectus. The information presented in the capitalization table has been adjusted to reflect the effect of this current offering.

(in thousands, except share and per share amounts)	As of December 31, 2023	
	Actual	As adjusted
Cash and cash equivalents	\$ 6,234	\$ 10,734
Stockholders’ equity		

Common stock, par value \$0.0001 per share; 200,000,000 shares authorized at December 31, 2023; 8,374,869 shares issued and outstanding, actual; 23,999,869 shares issued and outstanding, as adjusted	1	3
Common stock issuable, 419,089 shares at December 31, 2023	591	591
Additional paid-in capital	380,502	385,002
Accumulated deficit	(380,971)	(380,971)
Total stockholders' equity	<u>\$ 123</u>	<u>\$ 4,625</u>
Total capitalization	<u>\$ 123</u>	<u>\$ 4,625</u>

Each \$0.25 increase or decrease in the assumed public offering price per share of common stock and accompanying Warrants of \$0.32, the last reported sale price of our common stock on the Nasdaq Capital Market on April 26, 2024, would increase or decrease the net proceeds to us from this offering by \$3.9 million, assuming that the number of share of common stock and accompanying Warrants offered by us, as set forth on the cover page of this prospectus, remains the same, assuming no sale of any pre-funded warrants and accompanying Warrants, after deducting the estimated Placement Agent fees and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the Warrants issued pursuant to this offering. The as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering as determined between us and the Placement Agent at pricing.

The foregoing discussion and tables above are based on 8,374,869 shares of common stock outstanding as of December 31, 2023, and excludes:

- 76,112 shares of our common stock issuable upon the exercise of outstanding stock options as of December 31, 2023, with a weighted-average exercise price of \$85.95 per share;
- 95,197 shares of common stock issuable upon the vesting and settlement of outstanding restricted stock units as of December 31, 2023;
- 2,813,632 shares of our common stock issuable upon the exercise of outstanding warrants as of December 31, 2023, with a weighted-average exercise price of \$2.14 per share;
- 1,668,236 shares of our common stock issuable upon the exercise of outstanding pre-funded warrants as of December 31, 2023, with a weighted-average exercise price of \$0.001 per share;
- 56,359 shares of our common stock issuable upon conversion of the Class A Common Stock, at the holders' election;
- 16,666 shares of our common stock issuable upon conversion of the Class A Preferred Stock, at the holders' election;
- 285,764 shares of our common stock reserved for future issuance under the 2016 Plan, plus any future increases in the number of shares of common stock reserved for issuance thereunder; and
- 380,089 shares of our common stock reserved for future issuance under the ESPP, plus any future increases, including annual automatic evergreen increases, in the number of shares of common stock reserved for issuance thereunder.

## DILUTION

If you invest in our common stock, your interest will be immediately diluted to the extent of the difference between the public offering price per share and the as adjusted net tangible book value per share of our common stock after this offering. Net tangible book value per share represents our total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding.

As of December 31, 2023, our net tangible book value was \$0.1 million, or \$0.01 per share of common stock, based on 8,374,869 shares of common stock outstanding as of December 31, 2023.

After giving effect to the sale of 15,625,000 shares of our common stock and accompanying Series A-1 Warrants to purchase up to 15,625,000 shares of common stock, Series A-2 Warrants to purchase up to 15,625,000 shares of common stock, and Series A-3 Warrants to purchase up to 15,625,000 shares of common stock at an assumed public offering price per share of common stock and accompanying Warrants of \$0.32, the last reported sale price of our common stock on the Nasdaq Capital Market on April 26, 2024, assuming no sale of any pre-funded warrants in this offering, and after deducting the estimated placement agent fees and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the Warrants issued in this offering, our as adjusted net tangible book value as of December 31, 2023 would have been approximately \$4.6 million, or approximately \$0.19 per share. This represents an immediate increase in net tangible book value to existing shareholders of \$0.18 per share and an immediate dilution in net tangible book value of \$0.13 per share of our common stock to the investors purchasing securities in this offering.

The following table illustrates this per share dilution to the new investors purchasing shares of common stock in this offering:

Assumed combined public offering price per share of common stock and accompanying Warrants	\$ 0.32
Historical net tangible book value (deficit) per share as of December 31, 2023	\$ 0.01
Increase in net tangible book value per share attributable to investors purchasing in this offering	\$ 0.18
As adjusted net tangible book value per share as of December 31, 2023 after this offering	<u>\$ 0.19</u>
Dilution per share to investors purchasing in this offering	<u>\$ 0.13</u>

Each \$0.25 increase or decrease in the assumed public offering price per share of common stock and accompanying warrants of \$0.32, the last reported sale price of our common stock on the Nasdaq Capital Market on April 26, 2024, would increase or decrease the net proceeds to us from this offering by \$3.5 million, assuming that the number of share of common stock and accompanying Warrants offered by us, as set forth on the cover page of this prospectus, remains the same, assuming no sale of any pre-funded warrants and accompanying Warrants, after deducting the estimated Placement Agent fees and estimated offering expenses payable by us, and excluding the proceeds, if any, from the exercise of the Warrants issued pursuant to this offering. The as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering as determined between us and the Placement Agent at pricing.

The foregoing discussion and tables above are based on 8,374,869 shares of common stock outstanding as of December 31, 2023, and excludes:



- 76,112 shares of our common stock issuable upon the exercise of outstanding stock options as of December 31, 2023, with a weighted-average exercise price of \$85.95 per share;
- 95,197 shares of common stock issuable upon the vesting and settlement of outstanding restricted stock units as of December 31, 2023;
- 2,813,632 shares of our common stock issuable upon the exercise of outstanding warrants as of December 31, 2023, with a weighted-average exercise price of \$2.14 per share;

- 1,668,236 shares of our common stock issuable upon the exercise of outstanding pre-funded warrants as of December 31, 2023, with a weighted-average exercise price of \$0.001 per share;
- 56,359 shares of our common stock issuable upon conversion of the Class A Common Stock, at the holders' election;
- 16,666 shares of our common stock issuable upon conversion of the Class A Preferred Stock, at the holders' election;
- 285,764 shares of our common stock reserved for future issuance under the 2016 Plan, plus any future increases in the number of shares of common stock reserved for issuance thereunder; and
- 380,089 shares of our common stock reserved for future issuance under the ESPP, plus any future increases, including annual automatic evergreen increases, in the number of shares of common stock reserved for issuance thereunder.

To the extent that any outstanding options or warrants are exercised, new options or other equity awards are issued under our equity incentive plans, or we issue additional shares in the future, there will be further dilution to new investors participating in this offering.

#### MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES

The following discussion is a summary of certain material U.S. federal income tax consequences of the purchase, ownership and disposition of the shares of common stock and pre-funded warrants and accompanying Warrants or components thereof, which we refer to collectively as the "Securities," issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or foreign tax laws are not discussed. This discussion is based on the Internal Revenue Code of 1986, as amended (the "Code"), Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service (the "IRS") in effect as of the date of this offering. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a holder of the Securities. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position regarding the tax consequences of the purchase, ownership and disposition of the Securities.

This discussion is limited to holders that hold the Securities as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a holder's particular circumstances, including the impact of the alternative minimum tax or the unearned income Medicare contribution tax. In addition, it does not address consequences relevant to holders subject to particular rules, including, without limitation:

- U.S. expatriates and certain former citizens or long-term residents of the United States;
- persons holding the Securities as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- brokers, dealers or traders in securities;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell the Securities under the constructive sale provisions of the Code;
- persons for whom our stock and pre-funded warrants constitutes "qualified small business stock" within the meaning of Section 1202 of the Code;
- persons who hold or receive the Securities pursuant to the exercise of any employee stock option or otherwise as compensation;
- persons subject to special tax accounting rules as a result of any item of gross income with respect to the stock being taken into account in an "applicable financial statement" (as defined in the Code);
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds; and
- tax-qualified retirement plans.

If a partnership (or other entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds the Securities, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding the Securities and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

**THIS DISCUSSION IS FOR INFORMATION PURPOSES ONLY AND IS NOT INTENDED AS LEGAL OR TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF THE SECURITIES ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.**

## **Allocation of Purchase Price**

Each share of common stock or pre-funded warrant, as applicable, and accompanying Warrants will be treated for U.S. federal income tax purposes as an investment unit consisting of one share of our common stock or pre-funded warrant, as applicable, and accompanying Warrants to purchase our common stock. In determining their tax basis for the common stock or pre-funded warrant and the Warrants constituting an investment unit, holders of Securities should allocate their purchase price for the investment unit between the common stock or pre-funded warrant, as applicable, and the Warrants on the basis of their relative fair market values at the time of issuance. We do not intend to advise holders of the Securities with respect to this determination, and holders of the Securities are advised to consult their tax and financial advisors with respect to the relative fair market values of the common stock or pre-funded warrant, as applicable, and the Warrants for U.S. federal income tax purposes.

## **Treatment of Pre-Funded Warrants**

Although not free from doubt, a pre-funded warrant should be treated as a share of our common stock for U.S. federal income tax purposes, and a holder of pre-funded warrants should generally be taxed in the same manner as a holder of common stock, as described below. Accordingly, no gain or loss should be recognized (other than with respect to cash paid in lieu of a fractional share) upon the exercise of a pre-funded warrant (except in the case of a cashless exercise, the treatment of which for U.S. federal income tax purposes is not clear) and, upon exercise, the holding period of a pre-funded warrant should carry over to the share of common stock received. Similarly, the tax basis of the pre-funded warrant should carry over to the share of common stock received upon exercise, increased by the exercise price of \$0.0001. The discussion below assumes the characterization described above is respected for U.S. federal income tax purposes. Holders should consult their tax advisors regarding the risks associated with the acquisition of pre-funded warrants pursuant to this offering (including alternative characterizations).

## **Tax Considerations Applicable to U.S. Holders**

### ***Definition of a U.S. Holder***

For purposes of this discussion, a “U.S. holder” is any beneficial owner of the Securities that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more United States persons (within the meaning of Section 7701(a)(30) of the Code), or (2) has made a valid election under applicable Treasury Regulations to be treated as a United States person for U.S. federal income tax purposes.

### ***Distributions***

As described in the section entitled “Dividend Policy,” we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. However, if we do make distributions of cash or property on our common stock or pre-funded warrants (other than certain distributions of common stock), such distributions will constitute dividends to the extent paid out of our current or accumulated earnings and profits, as determined for U.S. federal income tax purposes. Dividends received by a corporate U.S. holder may be eligible for a dividends received deduction, subject to applicable limitations. Dividends received by certain non-corporate U.S. holders, including individuals, are generally taxed at the lower applicable capital gains rate provided certain holding period and other requirements are satisfied. Distributions in excess of our current and accumulated earnings and profits will constitute a return of capital and first be applied against and reduce a U.S. holder’s adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below in the section relating to the sale or disposition of our common stock or pre-funded warrants, as applicable.

### ***Sale or Other Taxable Disposition of Common Stock or Pre-Funded Warrants***

Upon the sale, exchange or other taxable disposition of the common stock or pre-funded warrants, a U.S. holder generally will recognize capital gain or loss equal to the difference between (i) the amount of cash and the fair market value of any property received upon the sale, exchange or other taxable disposition and (ii) such U.S. holder’s adjusted tax basis in the common stock or pre-funded warrant. Such capital gain or loss will be long-term capital gain or loss if the U.S. holder’s holding period in such common stock or pre-funded warrant is more than one year at the time of the sale, exchange or other taxable disposition. Long-term capital gains recognized by certain non-corporate U.S. holders, including individuals, generally will be subject to reduced rates of U.S. federal income tax. The deductibility of capital losses is subject to certain limitations.

### ***Sale or Other Disposition, Exercise or Expiration of the Warrants***

Upon the sale or other disposition of Warrants (other than by exercise), a U.S. holder will generally recognize capital gain or loss equal to the difference between the amount realized on the sale or other disposition and the U.S. holder’s tax basis in the Warrants. This capital gain or loss will be long-term capital gain or loss if the U.S. holder’s holding period in such Warrant is more than one year at the time of the sale or other disposition. The deductibility of capital losses is subject to certain limitations.

In general, a U.S. holder will not be required to recognize income, gain or loss upon exercise of the Warrants for their exercise prices (except to the extent the U.S. holder receives a cash payment for a such fractional share that would otherwise have been issuable upon exercise of the Warrants, which will be treated as a sale as described above under “Sale or Other Taxable Disposition of Common Stock or Pre-Funded Warrants”). A U.S. holder’s tax basis in a share of common stock received upon exercise of the Warrants will be equal to the sum of (i) the U.S. holder’s tax basis in the Warrants exchanged therefor and (ii) the exercise price of such Warrants. A U.S. holder’s holding period in the shares of common stock received upon exercise will commence on the day after such U.S. holder exercises the Warrants. U.S. holders are urged to consult their tax advisors as to the consequences of an exercise of the Warrants on a cashless basis, including with respect to their holding period and tax basis in the common stock received.

If a Warrant expires without being exercised, a U.S. holder will recognize a capital loss in an amount equal to such holder’s tax basis in such Warrant. Such loss will be long-term capital loss if, at the time of the expiration, the U.S. holder’s holding period in such Warrant is more than one year. The deductibility of capital losses is subject to certain limitations.

### ***Constructive Dividends on Common Warrants or Pre-Funded Warrants***

As described in the section entitled “Dividend Policy,” we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. However, if at any time during the period in which a U.S. holder holds Warrants or pre-funded warrants, we were to pay a taxable dividend to our stockholders and, in accordance with an anti-dilution provisions of the Warrants or pre-funded warrants, the exercise price thereof were decreased, that decrease would be deemed to be the payment of a taxable dividend to a U.S. holder of the Warrants or pre-funded warrants, as applicable, to the extent of our earnings and profits, notwithstanding the fact that such holder will not receive a cash payment. If the exercise price is adjusted in certain other circumstances or other adjustments are made (or in certain circumstances, there is a failure to make adjustments), such adjustments may also result in the deemed payment of a taxable dividend to a U.S. holder. In addition, a holder of a Warrant or pre-funded warrant may, in some circumstances, be deemed to have received a distribution subject to U.S. federal income tax as a result of an adjustment or the non-occurrence of an adjustment to the exercise price or number

We are currently required to report the amount of any deemed distributions on our website or to the IRS and to holders not exempt from reporting. The IRS has proposed regulations addressing the amount and timing of deemed distributions, as well as obligations of withholding agents and filing and notice obligations of issuers in respect of such deemed distributions. If adopted as proposed, the regulations would generally provide that (i) the amount of a deemed distribution is the excess of the fair market value of the right to acquire stock immediately after the exercise price adjustment over the fair market value of the right to acquire stock (after the exercise price adjustment) without the adjustment, (ii) the deemed distribution occurs at the earlier of the date the adjustment occurs under the terms of the instrument and the date of the distribution of cash or property that results in the deemed distribution and (iii) we are required to report the amount of any deemed distributions on our website or to the IRS and to all holders (including holders that would otherwise be exempt from reporting). The final regulations will be effective for deemed distributions occurring on or after the date of adoption, but holders and withholding agents may rely on them prior to that date under certain circumstances.

#### ***Information Reporting and Backup Withholding***

A U.S. holder may be subject to information reporting and backup withholding when such holder receives payments on the common stock or pre-funded warrants or Warrants (including constructive dividends) or receives proceeds from the sale or other taxable disposition of common stock, pre-funded warrants, or Warrants. Certain U.S. holders are exempt from backup withholding, including corporations and certain tax-exempt organizations. A U.S. holder will be subject to backup withholding if such holder is not otherwise exempt and such holder:

- fails to furnish the holder's taxpayer identification number, which for an individual is ordinarily his or her social security number;
- furnishes an incorrect taxpayer identification number;
- is notified by the IRS that the holder previously failed to properly report payments of interest or dividends;
- or fails to certify under penalties of perjury that the holder has furnished a correct taxpayer identification number and that the IRS has not notified the holder that the holder is subject to backup withholding.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a U.S. holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS. U.S. holders should consult their tax advisors regarding their qualification for an exemption from backup withholding and the procedures for obtaining such an exemption.

#### **Tax Considerations Applicable to Non-U.S. Holders**

For purposes of this discussion, a "non-U.S. holder" is a beneficial owner of the Securities that is neither a U.S. holder nor an entity treated as a partnership for U.S. federal income tax purposes.

#### ***Distributions***

As described in the section entitled "Dividend Policy," we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. However, if we do make distributions of cash or property (other than certain distributions of common stock) on our common stock or pre-funded warrants, such will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a non-U.S. holder's adjusted tax basis in its common stock or pre-funded warrants, but not below zero. Any excess will be treated as capital gain and will be treated as described below in the section relating to the sale or disposition of our common stock, pre-funded warrants or Warrants. Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of the withholding rules discussed below we or the applicable withholding agent may treat the entire distribution as a dividend.

Subject to the discussion below on backup withholding and foreign accounts, dividends paid to a non-U.S. holder of our common stock or pre-funded warrants that are not effectively connected with the non-U.S. holder's conduct of a trade or business within the United States will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty).

Non-U.S. holders will be entitled to a reduction in or an exemption from withholding on dividends as a result of either (a) an applicable income tax treaty or (b) the non-U.S. holder holding our common stock or pre-funded warrants in connection with the conduct of a trade or business within the United States and dividends being effectively connected with that trade or business. To claim such a reduction in or exemption from withholding, the non-U.S. holder must provide the applicable withholding agent with a properly executed (a) IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) claiming an exemption from or reduction of the withholding tax under the benefit of an income tax treaty between the United States and the country in which the non-U.S. holder resides or is established, or (b) IRS Form W-8ECI stating that the dividends are not subject to withholding tax because they are effectively connected with the conduct by the non-U.S. holder of a trade or business within the United States, as may be applicable. These certifications must be provided to the applicable withholding agent prior to the payment of dividends and must be updated periodically. Non-U.S. holders that do not timely provide the applicable withholding agent with the required certification, but that qualify for a reduced rate under an applicable income tax treaty, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

If dividends paid to a non-U.S. holder are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the non-U.S. holder maintains a permanent establishment in the United States to which such dividends are attributable), then, although exempt from U.S. federal withholding tax (provided the non-U.S. holder provides appropriate certification, as described above), the non-U.S. holder will be subject to U.S. federal income tax on such dividends on a net income basis at the regular graduated U.S. federal income tax rates. In addition, a non-U.S. holder that is a corporation may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on its effectively connected earnings and profits for the taxable year that are attributable to such dividends, as adjusted for certain items. Non-U.S. holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

#### ***Exercise of Common Warrants or Pre-Funded Warrants***

A non-U.S. holder generally will not be subject to U.S. federal income tax on the exercise of Warrants or pre-funded warrants into shares of common stock. Non-U.S. holders are urged to consult their tax advisors as to the consequences of an exercise of a Warrant on a cashless basis, including with respect to their holding period and tax basis in the common stock received.

### ***Sale or Other Disposition of Common Stock, Pre-Funded Warrants or Common Warrants***

Subject to the discussions below on backup withholding and foreign accounts, a non-U.S. holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock, pre-funded warrants or Warrants unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the non-U.S. holder maintains a permanent establishment in the United States to which such gain is attributable);
- the non-U.S. holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock, pre-funded warrants, or Warrants constitute U.S. real property interests ("USRPIs") by reason of our status as a U.S. real property holding corporation ("USRPHC") for U.S. federal income tax purposes.

Gain described in the first bullet point above will generally be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates. A non-U.S. holder that is a foreign corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

A non-U.S. holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on any gain derived from the disposition, which may be offset by certain U.S.-source capital losses of the non-U.S. holder (even though the individual is not considered a resident of the United States) provided the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we are not currently and do not anticipate becoming a USRPHC. Because the determination of whether we are a USRPHC depends on the fair market value of our USRPIs relative to the fair market value of our other business assets and our non-U.S. real property interests, however, there can be no assurance we are not a USRPHC or will not become one in the future.

Non-U.S. holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

### ***Constructive Dividends on Common Warrants or Pre-Funded Warrants***

As described in the section entitled "Dividend Policy," we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. However, if at any time during the period in which a non-U.S. holder holds Warrants or pre-funded warrants we were to pay a taxable dividend to our stockholders and, in accordance with the anti-dilution provisions of the Warrants or pre-funded warrants, the exercise price of the Warrants were decreased, that decrease would be deemed to be the payment of a taxable dividend to a non-U.S. holder to the extent of our earnings and profits, notwithstanding the fact that such holder will not receive a cash payment. If the exercise price is adjusted in certain other circumstances (or in certain circumstances, there is a failure to make adjustments), such adjustments may also result in the deemed payment of a taxable dividend to a non-U.S. holder. Any resulting withholding tax attributable to deemed dividends may be collected from other amounts payable or distributable to the non-U.S. holder. Non-U.S. holders should consult their tax advisors regarding the proper treatment of any adjustments to the Warrants and pre-funded warrants.

### ***Information Reporting and Backup Withholding***

Subject to the discussion below on foreign accounts, a non-U.S. holder will not be subject to backup withholding with respect to distributions on our common stock or pre-funded warrants we make to the non-U.S. holder (including constructive dividends with respect to Warrants and pre-funded warrants), provided the applicable withholding agent does not have actual knowledge or reason to know such holder is a United States person and the holder certifies its non-U.S. status, such as by providing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or other applicable certification. However, information returns generally will be filed with the IRS in connection with any distributions (including deemed distributions) made on our common stock, pre-funded warrants and Warrants to the non-U.S. holder, regardless of whether any tax was actually withheld. Copies of these information returns may also be made available under the provisions of a specific treaty or agreement to the tax authorities of the country in which the non-U.S. holder resides or is established.

Information reporting and backup withholding may apply to the proceeds of a sale or other taxable disposition of our common stock, pre-funded warrants or Warrants within the United States, and information reporting may (although backup withholding generally will not) apply to the proceeds of a sale or other taxable disposition of our common stock, pre-funded warrants or Warrants outside the United States conducted through certain U.S.-related financial intermediaries, in each case, unless the beneficial owner certifies under penalty of perjury that it is a non-U.S. holder on IRS Form W-8BEN or W-8BEN-E, or other applicable form (and the payor does not have actual knowledge or reason to know that the beneficial owner is a U.S. person) or such owner otherwise establishes an exemption. Proceeds of a disposition of our common stock, pre-funded warrants or Warrants conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a non-U.S. holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

### ***Additional Withholding Tax on Payments Made to Foreign Accounts***

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act ("FATCA")) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends (including deemed dividends) paid on our common stock, pre-funded warrants or Warrants, or (subject to the proposed Treasury Regulations discussed below) gross proceeds from the sale or other disposition of our common stock, pre-funded warrants or Warrants paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States-owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends (including deemed dividends).

Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of these withholding rules we or the applicable withholding agent may treat the entire distribution as a dividend. While withholding under FATCA would have applied also to payments of gross proceeds from the sale or other disposition of our common stock, pre-funded warrants or Warrants on or after January 1, 2019, proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued. Prospective investors should consult their tax advisors regarding the potential application of these withholding provisions.

**EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS TAX ADVISORS REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR SECURITIES, AS WELL AS TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL, NON-U.S. OR U.S. FEDERAL NON-INCOME TAX LAWS.**

## DESCRIPTION OF CAPITAL STOCK

*The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to, our amended and restated certificate of incorporation and our amended and restated bylaws, which have been publicly filed with the SEC. See “Where You Can Find More Information.” For a complete description, you should refer to our amended and restated certificate of incorporation and amended and restated bylaws, copies of which are incorporated by reference as exhibits to the registration statement of which this prospectus forms a part.*

### **Capital Stock**

We are authorized to issue 200,000,000 shares of common stock, par value of \$0.0001 per share, of which 1,000,000 shares are designated as Class A common stock, and 2,000,000 of preferred stock, \$0.0001 par value per share, of which 250,000 are designated as Class A Preferred Stock.

### **Common Stock**

The holders of common stock are entitled to one vote per share held.

As of April 25, 2024, there were 10,509,505 shares of our common stock outstanding held by 71 stockholders of record.

The undesignated preferred stock may be issued from time to time in one or more series. Our board of directors is authorized to determine or alter the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions, if any), the redemption price or prices, the liquidation preferences and other designations, powers, preferences and relative, participating, optional or other special rights, if any, and the qualifications, limitations and restrictions granted to or imposed upon any wholly unissued series of preferred stock, and to fix the number of shares of any series of preferred stock (but not below the number of shares of any such series then outstanding).

### **Class A Common Stock**

The holders of Class A common stock are entitled to the number of votes equal to the number of whole shares of common stock into which the shares of Class A Common Shares held by such holder are convertible. For a period of ten years from issuance, the holders of the Class A common stock have the right to appoint one member of the Board of Directors of Mustang. To date, the holders of Class A common stock have not yet appointed such director.

### **Class A Preferred Stock**

The Class A Preferred Stock is identical to undesignated common stock other than as to voting rights, conversion rights, and the PIK dividend right.

The holders of the outstanding shares of Class A Preferred Stock receive on each January 1 (each a “PIK Dividend Payment Date”) after the original issuance date of the Class A Preferred Stock until the date all outstanding Class A Preferred Stock is converted into common stock or redeemed (and the purchase price is paid in full), pro rata per share dividends paid in additional fully paid and non-assessable shares of common stock such that the aggregate number of shares of common stock issued pursuant to such PIK dividend is equal to 2.5% of the Corporation’s fully-diluted outstanding capitalization on the date that is one business day prior to any PIK Dividend Payment Date (“PIK Record Date”). In the event the Class A Preferred Stock converts into common stock, the holders shall receive all PIK dividends accrued through the date of such conversion. No dividend or other distribution shall be paid, or declared and set apart for payment (other than dividends payable solely in capital stock on the capital stock) on the shares of common stock until all PIK dividends on the Class A Preferred Stock shall have been paid or declared and set apart for payment. All dividends are non-cumulative.

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

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

### **Additional Features**

Other features of our capital stock include:

- *Dividend Rights.* The holders of outstanding shares of our common stock, including Class A common stock, are entitled to receive dividends out of funds legally available at the times and in the amounts that our Board of Directors may determine. All dividends are non-cumulative.
- *Voting Rights.* The holders of our common stock are 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 and bylaws do not provide for cumulative voting rights.
- *No Preemptive or Similar Rights.* The holders of our common stock have no preemptive, conversion, or subscription rights, and there are no redemption or sinking fund provisions applicable to our common stock.
- *Right to Receive Liquidation Distributions.* Upon our liquidation, dissolution, or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock, including Class A common stock, outstanding at that time after payment of other claims of creditors, if any.
- *Fully Paid and Non-Assessable.* All of the outstanding shares of our common stock, including Class A common stock, and the Class A Preferred Stock are duly issued, fully paid and non-assessable.

## DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering up to 15,625,000 shares of common stock, together with Series A-1 Warrants to purchase up to 15,625,000 shares of common stock, Series A-2 Warrants to purchase up to 15,625,000 shares of common stock, and Series A-3 Warrants to purchase up to 15,625,000 shares of common stock. We are also offering pre-funded warrants to purchase shares of common stock to those purchasers, whose purchase of shares of common stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock following the consummation of this offering in lieu of the shares of our common stock that would result in ownership in excess of 4.99% (or, at the election of the purchaser, 9.99%). Each pre-funded warrant will be exercisable for one share of common stock. Each pre-funded warrant is being issued together with the same Warrants described above being issued with each share of common stock. The shares of common stock or pre-funded warrants, as the case may be, and the accompanying Warrants, can only be purchased together in this offering, but the shares of common stock and pre-funded warrants and accompanying Warrants are immediately separable and will be issued separately in this offering. We are also registering the shares of common stock issuable from time to time upon exercise of the pre-funded warrants and Warrants offered hereby.

### **Common Stock**

The description of our common stock under the section “Description of Our Capital Stock” in this prospectus is incorporated herein by reference.

### **Warrants**

The following summary of certain terms and provisions of the Warrants included with the shares of common stock and the pre-funded warrants that are being issued hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the Warrants, the forms of which will be filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Warrant for a complete description of the terms and conditions of the warrants. The Series A-1 Warrant, Series A-2 Warrant, and Series A-3 Warrant are identical except with regard to their duration.

#### *Duration and Exercise Price*

Each Warrant offered hereby will have an exercise price of \$0.32 per share and will be exercisable beginning on the effective date of the Warrant Stockholder Approval, provided however, if the Pricing Conditions are met, the Warrants will be exercisable upon issuance (the “Initial Exercise Date”). The exercise price and number of shares of common stock issuable upon exercise of the warrants is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The Warrants will be issued separately from the common stock and pre-funded warrants and may be transferred separately immediately thereafter. The Warrants will be issued in certificated form only. The Series A-1 Warrants will expire on the five-year anniversary of the Initial Exercise Date. The Series A-2 Warrants will expire on the twenty four month anniversary of the Initial Exercise Date. The Series A-3 Warrants will expire on the nine month anniversary of the Initial Exercise Date.

We intend to promptly, and in no event later than 90 days after the consummation of this offering, seek stockholder approval for the issuance of shares of common stock issuable upon exercise of the Warrants but we cannot assure you that such stockholder approval will be obtained, provided, however, that, if and only if the Pricing Conditions are satisfied, then we will not seek Stockholder Approval. We have agreed with the investors in this offering that, if we do not obtain stockholder approval for the issuance of the shares of common stock upon exercise of the Warrants at the first stockholder meeting for such purpose after this offering, we will call a stockholder meeting every 90 days thereafter until the earlier of the date we obtain such approval or the Warrants are no longer outstanding, provided, however, that, if and only if the Pricing Conditions are satisfied, then we will not seek Stockholder Approval.

#### *Exercisability*

The Warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the Warrant to the extent that the holder would own more than 4.99% (or, at the election of the purchaser prior to the issuance of the Warrants, 9.99%) of the outstanding common stock immediately after exercise. Following the issuance of the Warrants, upon notice from the holder to us, the holder may increase or decrease the amount of beneficial ownership of outstanding stock after exercising the holder’s Warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Warrants and in accordance with the rules and regulations of the SEC, provided that any increase in the beneficial ownership limitation shall not be effective until 61 days following notice to us.

#### *Cashless Exercise*

If, at the time a holder exercises its Warrants, a registration statement registering the issuance of the shares of common stock underlying the Warrants under the Securities Act is not then effective or available 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 Warrants.

### *Fractional Shares*

No fractional shares of common stock will be issued upon the exercise of the Warrants. Rather, the number of shares of common stock to be issued will be rounded up to the next whole share or we will pay a cash adjustment equal to such fraction multiplied by the exercise price to the holder.

### *Transferability*

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

### *Trading Market*

There is no trading market available for the Warrants on any securities exchange or nationally recognized trading system, and we do not expect a trading market to develop. We do not intend to list the Warrants on any securities exchange or other trading market. Without a trading market, the liquidity of the Warrants will be extremely limited. The common stock issuable upon exercise of the Warrants is currently listed on the Nasdaq Capital Market.

### *Right as a Shareholder*

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

### *Fundamental Transaction*

In the event of a fundamental transaction, as described in the Warrants and generally including any reorganization, recapitalization or reclassification of our 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 greater than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of greater than 50% of the voting power represented by our outstanding common stock, the holders of the Warrants will be entitled to receive upon exercise of the Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Warrants immediately prior to such fundamental transaction. In addition, in the event of a fundamental transaction which is approved by our board of directors, the holders of the Warrants have the right to require us or a successor entity to redeem the Warrants for cash in the amount of the Black-Scholes Value (as defined in the Warrants) of the unexercised portion of the Warrants on the date of the consummation of the fundamental transaction. In the event of a fundamental transaction which is not in our control, including a fundamental transaction not approved by our board of directors, the holders of the Warrants have the right to require us or a successor entity to redeem the Warrants for the consideration paid in the fundamental transaction in the amount of the Black-Scholes Value of the unexercised portion of the Warrants on the date of the consummation of the fundamental transaction.

### *Amendments*

The Warrants may be modified or amended with the written consent of the holder of such Warrants and us.

### **Pre-Funded Warrants**

The following summary of certain terms and provisions of the pre-funded warrants that are being issued hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the pre-funded warrant, the form of which will be filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

### *Duration and Exercise Price*

Each pre-funded warrant offered hereby will have an initial exercise price per share equal to \$0.0001. The pre-funded warrants will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The pre-funded warrants will be issued separately from the accompanying Warrants, in certificated form only.

### *Exercisability*

The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our 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 warrant to the extent that the holder would own more than 4.99% (or, at the election of the purchaser prior to the issuance of the pre-funded warrant, 9.99%) of the outstanding common stock immediately after exercise. Following the issuance of the pre-funded warrants, upon notice from the holder to us, the holder may increase or decrease the amount of beneficial ownership of outstanding stock after exercising the holder's pre-funded warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants and in accordance with the rules and regulations of the SEC. Purchasers of pre-funded warrants in this offering may also elect prior to the issuance of the pre-funded warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock, provided that any increase in the beneficial ownership limitation shall not be effective until 61 days following notice to us.

### *Cashless Exercise*

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.

### *Transferability*

Subject to applicable law, 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.

### *Fractional Shares*

No fractional shares of common stock will be issued upon the exercise of the pre-funded warrants. Rather, the number of shares of common stock to be issued will be rounded up to the next whole share or we will pay a cash adjustment to such fraction multiplied by the exercise price to the holder.

*Trading Market*

There is no trading market available for the pre-funded warrants on any securities exchange or nationally recognized trading system, and we do not expect a trading market to develop. We do not intend to list the pre-funded warrants on any securities exchange or other trading market. Without a trading market, the liquidity of the pre-funded warrants will be extremely limited. The common stock issuable upon exercise of the pre-funded warrants is currently listed on the Nasdaq Capital Market.

*Right as a Stockholder*

Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their pre-funded warrants. The pre-funded warrants will provide that holders have the right to participate in distributions or dividends paid on our common stock.

*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 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 greater than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of greater than 50% of the voting power represented by our outstanding 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.

*Amendments*

The pre-funded warrants may be modified or amended with the written consent of the holder of such pre-funded warrant and us.

**Placement Agent Warrants**

The following summary of certain terms and provisions of the Placement Agent Warrants that are being issued hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the Placement Agent Warrants, the form of which will be filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Placement Agent Warrant for a complete description of the terms and conditions of the Placement Agent Warrant.

*Duration and Exercise Price*

Each Placement Agent Warrant offered hereby will have an initial exercise price equal to \$0.40 per share of common stock (125% of the combined public offering price per share of common stock and Warrants). The Placement Agent Warrants will be exercisable beginning on the effective date of the Stockholder Approval, provided however, if the Pricing Conditions are met, such Placement Agent Warrants will be exercisable upon issuance and will expire five years from the commencement of sales in this offering. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price.

*Exercisability*

The Placement Agent Warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our 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 Placement Agent Warrant to the extent that the holder would own more than 4.99% (or, at the election of the purchaser prior to the issuance of such warrants, 9.99%) of the outstanding common stock immediately after exercise, except that upon notice from the holder to us, the holder may increase or decrease the amount of beneficial ownership of outstanding stock after exercising the holder's Placement Agent Warrant up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Placement Agent Warrants and in accordance with the rules and regulations of the SEC, provided that any increase in the beneficial ownership limitation shall not be effective until 61 days following notice to us.

*Cashless Exercise*

If, at the time a holder exercises its Placement Agent Warrants, a registration statement registering the issuance of the shares of common stock underlying the Placement Agent Warrants under the Securities Act is not then effective or 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 Placement Agent Warrants.

*Fractional Shares*

No fractional shares of common stock will be issued upon the exercise of the Placement Agent Warrants. Rather, the number of shares of common stock to be issued will be rounded up to the next whole share or we will pay a cash adjustment equal to such fraction multiplied by the exercise price to the holder.

*Transferability*

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

*Trading Market*

There is no trading market available for the Placement Agent Warrants on any securities exchange or nationally recognized trading system, and we do not expect a trading market to develop. We do not intend to list the Placement Agent Warrants on any securities exchange or other trading market. Without a trading market, the liquidity of the Placement Agent Warrants will be extremely limited. The common stock issuable upon exercise of the Placement Agent Warrants is currently listed on the Nasdaq Capital Market.



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

#### Fundamental Transaction

In the event of a fundamental transaction, as described in the Placement Agent Warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of greater than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of greater than 50% of the voting power represented by our outstanding common stock, the holders of the Placement Agent Warrants will be entitled to receive upon exercise of the Placement Agent Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Placement Agent Warrants immediately prior to such fundamental transaction. In addition, in the event of a fundamental transaction which is approved by our board of directors, the holders of the Placement Agent Warrants have the right to require us or a successor entity to redeem the Placement Agent Warrant for cash in the amount of the Black-Scholes value of the unexercised portion of the Placement Agent Warrant on the date of the consummation of the fundamental transaction. In the event of a fundamental transaction which is not approved by our board of directors, the holders of the Placement Agent Warrants have the right to require us or a successor entity to redeem the Placement Agent Warrants for the consideration paid in the fundamental transaction in the amount of the Black Scholes value of the unexercised portion of the Placement Agent Warrant on the date of the consummation of the fundamental transaction.

#### Amendments

The Placement Agent Warrants may be modified or amended with the written consent of the holder of such Placement Agent Warrants and us.

### PLAN OF DISTRIBUTION

We have engaged H.C. Wainwright & Co., LLC (the "Placement Agent") to act as our exclusive placement agent to solicit offers to purchase the securities offered pursuant to this prospectus on a "reasonable best efforts" basis. The engagement agreement does not give rise to any commitment by the Placement Agent to purchase any of our securities, and the Placement Agent will have no authority to bind us by virtue of the engagement agreement. The Placement Agent is not purchasing or selling any of the securities offered by us under this prospectus, nor is it required to arrange for the purchase or sale of any specific number or dollar amount of securities. This is a best efforts offering and there is no minimum offering amount required as a condition to the closing of this offering. The Placement Agent has agreed to use reasonable best efforts to arrange for the sale of the securities by us. Therefore, we may not sell all of the shares of common stock, pre-funded warrants and Warrants being offered. The terms of this offering are subject to market conditions and negotiations between us, the Placement Agent and prospective investors. The Placement Agent does not guarantee that it will be able to raise new capital in any prospective offering. The Placement Agent may engage sub-agents or selected dealers to assist with the offering.

Investors purchasing securities offered hereby will have the option to execute a securities purchase agreement with us. In addition to rights and remedies available to all purchasers in this offering under federal securities and state law, the purchasers which enter into a securities purchase agreement will also be able to bring claims of breach of contract against us. The ability to pursue a claim for breach of contract is material to larger purchasers in this offering as a means to enforce the following covenants uniquely available to them under the securities purchase agreement: (i) a covenant to not enter into variable rate financings for a period of one year following the closing of the offering, subject to an exception; and (ii) a covenant to not enter into any equity financings for 30 days from closing of the offering, subject to certain exceptions. The nature of the representations, warranties and covenants in the securities purchase agreements shall include:

- standard issuer representations and warranties on matters such as organization, qualification, authorization, no conflict, no governmental filings required, current in SEC filings, no litigation, labor or other compliance issues, environmental, intellectual property and title matters and compliance with various laws such as the Foreign Corrupt Practices Act; and
- covenants regarding matters such as registration of Warrant shares, no integration with other offerings, no stockholder rights plans, no material nonpublic information, use of proceeds, indemnification of purchasers, reservation and listing of shares of common stock, and no subsequent equity sales for 30 days, subject to certain exceptions.

This offering will terminate on May 13, 2024, unless we decide to terminate the offering (which we may do at any time in our discretion) prior to that date. We will have one closing for all the securities purchased in this offering. The combined public offering price per share (or pre-funded warrant) and Warrants will be fixed for the duration of this offering.

We expect to deliver the shares and securities to the purchasers in the offering on or about \_\_\_\_\_, 2024, subject to satisfaction of certain conditions

#### Fees and Expenses

The following table shows per share and accompanying Warrants and per pre-funded warrant and accompanying Warrants Placement Agent fees and total Placement Agent fees we will pay in connection with the sale of the securities in this offering, assuming the purchase of all of the securities we are offering.

Per share and accompanying Warrants Placement Agent cash fees	\$
Per pre-funded warrant and accompanying Warrants Placement Agent cash fees	\$
Total	\$

We have agreed to pay the Placement Agent a total cash fee equal to 7.0% of the gross proceeds of this offering and a management fee equal to 1.0% of the gross proceeds raised in this offering. We will also pay the Placement Agent a non-accountable expense allowance of \$25,000, \$15,950 for the expenses of its clearing firm, and will reimburse the Placement Agent's legal fees and expenses in an amount up to \$100,000. We estimate the total offering expenses of this offering that will be payable by us, excluding the Placement Agent's fees and expenses, will be approximately \$0.5 million. After deducting the Placement Agent's fees and our estimated offering expenses, we expect the net

proceeds from this offering to be approximately \$4.5 million.

### **Placement Agent Warrants**

We have agreed to grant Placement Agent Warrants to the Placement Agent to purchase a number of shares of our common stock equal to 6.0% of the aggregate number of shares of common stock and pre-funded warrants sold to the investors in this offering. The Placement Agent Warrants will have an exercise price of \$0.40 (125% of the combined public offering price per share of common stock and accompanying Warrants) and will terminate on the five year anniversary of commencement of sales in this offering. The Placement Agent Warrants are registered on the registration statement of which this prospectus is a part. The form of the Placement Agent Warrants is included as an exhibit to this registration statement of which this prospectus forms a part.

### **Right of First Refusal**

We have granted the Placement Agent a right of first refusal for a period of 10 months following the closing of this offering to act as sole book-running manager, sole underwriter or sole placement agent for each and every future public or private offering or other capital-raising financing of equity or equity-linked securities using an underwriter or placement agent by us or any of our successors or subsidiaries, subject to certain exceptions.

### **Tail**

We have also agreed to pay the Placement Agent a tail fee equal to the cash and warrant compensation in this offering, if any investor, who was wall-crossed by the Placement Agent with respect to a non-public offering or had back and forth correspondence with the Placement Agent with respect to a public offering of our securities, in each case during the term of its engagement, provides us with capital in any public or private offering or other financing or capital raising transaction during the 12-month period following expiration or termination of our engagement of the Placement Agent, subject to an exception.

### **Other Relationships**

From time to time, the Placement Agent may provide in the future, various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which it may receive customary fees and commissions. Except as disclosed in this prospectus, we have no present arrangements with the Placement Agent for any services.

### **Determination of Offering Price**

The combined offering price per share and accompanying Warrants and the combined offering price per pre-funded warrants and accompanying Warrants we are offering and the exercise prices and other terms of the Warrants were negotiated between us and the investors, in consultation with the Placement Agent based on the trading of our common stock prior to this offering, among other things. Other factors considered in determining the offering prices of the securities we are offering and the exercise prices and other terms of the Warrants include the history and prospects of our company, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

### **Lock-up Agreements**

We and each of our executive officers, directors and holders of 10% or greater of our outstanding shares of common stock have agreed with the Placement Agent to be subject to a lock-up period of 30 days following the date of closing of the offering pursuant to this prospectus. This means that, during the applicable lock-up period, we and such persons may not offer for sale, contract to sell, sell, distribute, grant any option, right or warrant to purchase, pledge, hypothecate or otherwise dispose of, directly or indirectly, any of our shares of common stock or any securities convertible into, or exercisable or exchangeable for, shares of common stock, subject to customary exceptions. The Placement Agent may waive the terms of these lock-up agreements in its sole discretion and without notice. In addition, we have agreed to not issue any securities that are subject to a price reset based on the trading prices of our common stock or upon a specified or contingent event in the future or enter into any agreement to issue securities at a future determined price for a period of one year following the closing date of this offering, subject to an exception. The Placement Agent may waive this prohibition in its sole discretion and without notice.

### **Transfer Agent and Registrar**

The transfer agent and registrar for our common stock is VStock Transfer, LLC.

### **Nasdaq Listing**

Our common stock is currently listed on the Nasdaq Capital Market under the symbol "MBIO." On April 26, 2024, the reported closing price per share of our common stock was \$0.32. We do not plan to list the Warrants or the pre-funded warrants on the Nasdaq Capital Market or any other securities exchange or trading market.

### **Indemnification**

We have agreed to indemnify the Placement Agent against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the Placement Agent may be required to make with respect to any of these liabilities.

### **Regulation M**

The Placement Agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act and any fees received by it and any profit realized on the sale of the securities by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. The Placement Agent will be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of our securities by the Placement Agent. Under these rules and regulations, the Placement Agent may not (i) engage in any stabilization activity in connection with our securities; and (ii) bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

### **Electronic Offer, Sale and Distribution of Securities**

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

## LEGAL MATTERS

The validity of the securities offered in this prospectus will be passed upon for us by Troutman Pepper Hamilton Sanders LLP, Charlotte, North Carolina. The Placement Agent is being represented by Ellenoff, Grossman & Schole LLP, New York, New York.

## EXPERTS

The financial statements of Mustang Bio, Inc. as of December 31, 2023 and 2022, and for each of the years in the two-year period ended December 31, 2023, have been incorporated by reference herein in reliance upon the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2023 financial statements contains an explanatory paragraph that states the Company's expectation to generate operating losses and negative operating cash flows in the future, and the need for additional funding to support its planned operations raise substantial doubt about its ability to continue as a going concern. The financial statements do not include any adjustments that might result from the outcome of that uncertainty.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1, including exhibits and schedules, under the Securities Act, with respect to the shares of common stock being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to us and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits and to the documents incorporated by reference herein. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement or a document incorporated by reference herein. Each of these statements is qualified in all respects by this reference.

You may read our SEC filings, including this registration statement, over the Internet at the SEC's website at [www.sec.gov](http://www.sec.gov). Upon the completion of this offering, we will be subject to the information reporting requirements of the Exchange Act and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for review on the web site of the SEC referred to above. We also maintain a website at [www.mustangbio.com](http://www.mustangbio.com), at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we filed with the SEC (File No. 001-38191):

- [our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 11, 2024;](#)
- our Current Reports on Form 8-K filed with the SEC on [January 4, 2024](#); [January 25, 2024](#); [February 14, 2024](#); [March 15, 2024](#); [March 29, 2024](#); and [April 12, 2024](#); and
- [the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on August 21, 2017, including any amendments or reports filed for the purposes of updating this description.](#)

Notwithstanding the statements in the preceding paragraphs, no document, report or exhibit (or portion of any of the foregoing) or any other information that we have "furnished" to the SEC pursuant to the Exchange Act shall be incorporated by reference into this prospectus.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement of which this prospectus forms a part and prior to effectiveness of the registration statement, or (ii) after the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements on Schedule 14A.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits that are specifically incorporated by reference into such documents. You should direct any requests for documents to Mustang Bio, Inc., 377 Plantation Street, Worcester, Massachusetts 01605, Attn: General Counsel, or by calling (781) 652-4500.

You also may access these filings on our website at [www.mustangbio.com](http://www.mustangbio.com). We do not incorporate the information on our website into this prospectus or any supplement to this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus or any supplement to this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus or any supplement to this prospectus). You may also access these filings at the SEC's website at [www.sec.gov](http://www.sec.gov).

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus modifies, supersedes or replaces such statement.



Up to 15,625,000 Shares of Common Stock and accompanying  
 Series A-1 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
 Series A-2 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
 Series A-3 Warrants to Purchase up to 15,625,000 Shares of Common Stock

or  
 Up to 15,625,000 Pre-funded Warrants to Purchase up to 15,625,000 Shares of Common Stock and accompanying  
 Series A-1 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
 Series A-2 Warrants to Purchase up to 15,625,000 Shares of Common Stock  
 Series A-3 Warrants to Purchase up to 15,625,000 Shares of Common Stock

Placement Agent Warrants to Purchase up to 937,500 Shares of Common Stock

Up to 63,457,500 Shares of Common Stock Issuable Upon Exercise of  
 the Series A-1 Warrants, Series A-2 Warrants, Series A-3 Warrants, Pre-funded Warrants and Placement Agent Warrants

Agent Warrants

PRELIMINARY PROSPECTUS

, 2024

H.C. Wainwright & Co.

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**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 13. Other Expenses of Issuance and Distribution.**

The following table indicates the expenses to be incurred in connection with the offering described in this registration statement, other than Placement Agent fees, all of which will be paid by us. All amounts are estimated except the SEC registration fee and the Financial Industry Regulatory Authority, Inc. ("FINRA") filing fee.

<b>Item</b>	<b>Amount</b>
SEC registration fee	\$ 3,007
FINRA filing fee	3,556
Legal fees and expenses	100,000
Accounting fees and expenses	100,000
Miscellaneous expenses	3,437
<b>Total</b>	<b>\$ 210,000</b>

**Item 14. Indemnification of Directors and Officers.**

Under the General Corporation Law of the State of Delaware (the "DGCL"), a corporation may include provisions in its certificate of incorporation that will relieve its directors of monetary liability for breaches of their fiduciary duty to the corporation, except under certain circumstances, including a breach of the director's duty of loyalty, acts or omissions of the director not in good faith or which involve intentional misconduct or a knowing violation of law, the approval of an improper payment of a dividend or an improper purchase by the corporation of stock or any transaction from which the director derived an improper personal benefit. Our Amended and Restated Certificate of Incorporation, as amended, eliminates the personal liability of directors to us or our stockholders for monetary damages for breach of fiduciary duty as a director with certain limited exceptions set forth in the DGCL.

Section 145 of the DGCL grants to corporations the power to indemnify each officer and director against liabilities and expenses incurred by reason of the fact that he or she is or was an officer or director of the corporation if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. Our Amended and Restated Certificate of Incorporation, as amended, and Amended and Restated Bylaws, as amended, provide for indemnification of each of our officers and directors to the fullest extent permitted by the DGCL. Section 145 of the DGCL also empowers corporations to purchase and maintain insurance on behalf of any person who is or was an officer or director of the corporation against liability asserted against or incurred by him in any such capacity, whether or not the corporation would have the power to indemnify such officer or director against such liability under the provisions of Section 145 of the DGCL.

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**Item 15. Recent Sales of Unregistered Securities.**

The following list sets forth information as to all unregistered securities we have sold since January 1, 2021 through the date of the prospectus that is a part of this registration statement:

**October 2023 Private Placement**

On October 26, 2023, we entered into a Securities Purchase Agreement (the “Purchase Agreement”) with an institutional accredited investor, for a private placement offering of warrants to purchase 2,588,236 shares of common stock. Pursuant to the Purchase Agreement, we agreed to issue and sell the warrants at an offering price of \$0.125 per warrant to purchase one share of common stock. The warrants have an exercise price of \$1.58 per share (subject to adjustment as set forth in the warrants), were exercisable immediately upon issuance and will expire five and one-half (5.5) years thereafter. The warrants contain standard anti-dilution adjustments to the exercise price including for share splits, share dividend, rights offerings and pro rata distributions. This private placement closed on October 30, 2023, concurrently with an offering to the same institutional accredited investor that was registered under the Securities Act. The gross proceeds to us from the private placement, before deducting placement agent fees and other estimated offering expenses payable by the Company, were approximately \$0.32 million. H.C. Wainwright & Co., LLC (“Wainwright”) acted as the exclusive placement agent in connection with the private placement under an engagement, between the Company and Wainwright. Pursuant to the Engagement Letter, Wainwright was paid a cash fee equal to 7.0% of the gross proceeds received by us in the Offerings, a management fee equal to 1.0% of the gross proceeds of the Offering, \$75,000 for non-accountable expenses and a clearing fee of \$15,950. In addition, under the terms of the Engagement Letter, we issued to Wainwright (or its designees) warrants to purchase up to 155,294 shares of Common Stock (the “Wainwright Warrants”). The Wainwright Warrants have substantially the same terms as the Warrants, except that the Wainwright Warrants will expire five (5) years from the commencement of the sales of the Offerings and have an exercise price of \$2.125 per share (subject to customary adjustment as set forth in the Wainwright Warrants). The 2023 Warrants were offered and sold in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act. The investor also represented that it qualified as an “accredited investor” within the meaning of Rule 501 of Regulation D.

**Item 16. Exhibits and financial statement schedules.****(a) Exhibits.**

The exhibits listed below are filed as part of this registration statement.

Exhibit No.	Description	Form	File Number	Date	Exhibit No.	Filed Herewith
<a href="#">1.1</a>	<a href="#">At Market Issuance Sales Agreement, dated July 27, 2018, between the Company, B. Riley FBR, Inc., Cantor Fitzgerald &amp; Co., National Securities Corporation, and Oppenheimer &amp; Co. Inc.</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 27, 2018</a>	<a href="#">1.1</a>	
<a href="#">1.2</a>	<a href="#">Amendment No. 1 to At Market Issuance Sales Agreement, dated July 20, 2020, between the Company, B. Riley FBR, Inc., Cantor Fitzgerald &amp; Co., National Securities Corporation and Oppenheimer &amp; Co. Inc.</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 24, 2020</a>	<a href="#">1.2</a>	

Exhibit No.	Description	Form	File Number	Date	Exhibit No.	Filed Herewith
<a href="#">1.3</a>	<a href="#">Amendment No. 2 to At Market Issuance Sales Agreement, dated December 31, 2020, between the Company, B. Riley Securities, Inc., Cantor Fitzgerald &amp; Co., National Securities Corporation, Oppenheimer &amp; Co. Inc. and H.C. Wainwright &amp; Co., LLC. (incorporated by reference to the Exhibit 1.1 of the Registrant’s Current Report on Form 8-K (file No. 001-38191) filed with the SEC on December 31, 2020).</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">December 31, 2020</a>	<a href="#">1.1</a>	
<a href="#">1.4</a>	<a href="#">Amendment No. 3 to At Market Issuance Sales Agreement, dated April 14, 2023, between the Registrant B. Riley Securities, Inc., Cantor Fitzgerald &amp; Co. and H.C. Wainwright &amp; Co., LLC</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">April 20, 2023</a>	<a href="#">1.1</a>	
<a href="#">2.1</a>	<a href="#">Asset Purchase Agreement, dated May 18, 2023, between the Company and uBriGene (Boston) Biosciences, Inc. #</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">May 22, 2023</a>	<a href="#">1.1</a>	
<a href="#">2.2</a>	<a href="#">First Amendment to Asset Purchase Agreement, dated June 29, 2023, between the Company and uBriGene (Boston) Biosciences, Inc.</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">June 30, 2023</a>	<a href="#">2.2</a>	
<a href="#">2.3</a>	<a href="#">Second Amendment to Asset Purchase Agreement, dated July 28, 2023, between the Company and uBriGene (Boston) Biosciences, Inc.</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 31, 2023</a>	<a href="#">2.3</a>	
<a href="#">3.1</a>	<a href="#">Amended and Restated Certificate of Incorporation of Mustang Bio, Inc. (formerly Mustang Therapeutics, Inc.), dated July 26, 2016</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">3.1</a>	
<a href="#">3.2</a>	<a href="#">Certificate of Amendment of the Amended and Restated Certificate of Incorporation of Mustang Bio, Inc., dated June 14, 2018</a>	<a href="#">10-Q</a>	<a href="#">001-38191</a>	<a href="#">August 13, 2018</a>	<a href="#">3.1</a>	
<a href="#">3.3</a>	<a href="#">Certificate of Amendment of the Amended and Restated Certificate of Incorporation of Mustang Bio, Inc., dated September 30, 2019</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">September 30, 2019</a>	<a href="#">3.1</a>	
<a href="#">3.4</a>	<a href="#">Certificate of Amendment of the Amended and Restated Certificate of Incorporation of Mustang Bio, Inc., dated December 4, 2020</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">December 4, 2020</a>	<a href="#">3.1</a>	
<a href="#">3.5</a>	<a href="#">Certificate of Amendment of the Amended and Restated Certificate of Incorporation of Mustang Bio, Inc., dated June 17, 2021</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">June 22, 2021</a>	<a href="#">3.1</a>	

Exhibit No.	Description	Form	File Number	Date	Exhibit No.	Filed Herewith
<a href="#">3.6</a>	<a href="#">Certificate of Amendment of the Amended and Restated Certificate of Incorporation of Mustang Bio, Inc., dated July 5, 2022</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 7, 2022</a>	<a href="#">3.1</a>	
<a href="#">3.7</a>	<a href="#">Certificate of Amendment of the Amended and Restated Certificate of Incorporation of Mustang Bio, Inc., dated April 3, 2023</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">April 3, 2023</a>	<a href="#">3.1</a>	
<a href="#">3.8</a>	<a href="#">Amended and Restated Bylaws of Mustang Bio, Inc.</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">April 3, 2023</a>	<a href="#">3.2</a>	
<a href="#">4.1</a>	<a href="#">Specimen certificates evidencing shares of common stock, Class A common stock and Class A preferred stock</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">4.1</a>	
<a href="#">4.2</a>	<a href="#">Form of Warrant Agreement</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">4.2</a>	
<a href="#">4.3</a>	<a href="#">Common Stock Warrant issued by Mustang Bio, Inc. to NSC Biotech Venture Fund I, LLC, dated July 5, 2016</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.5</a>	
<a href="#">4.4</a>	<a href="#">Warrant to Purchase Common Stock issued to Runway Growth Finance Corp., dated March 4, 2022</a>	<a href="#">8-K</a>	<a href="#">001-3891</a>	<a href="#">March 8, 2022</a>	<a href="#">4.1</a>	
<a href="#">4.5</a>	<a href="#">Form of Pre-funded Warrant</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">October 30, 2023</a>	<a href="#">4.1</a>	
<a href="#">4.6</a>	<a href="#">Form of Warrant</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">October 30, 2023</a>	<a href="#">4.2</a>	
<a href="#">4.7</a>	<a href="#">Form of Wainwright Warrant</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">October 30, 2023</a>	<a href="#">4.3</a>	
<a href="#">4.8^</a>	<a href="#">Form of Pre-Funded Warrant offered hereby</a>					
<a href="#">4.9</a>	<a href="#">Form of Series A-1, Series A-2, and Series A-3 Warrant offered hereby</a>					<a href="#">X</a>
<a href="#">4.10^</a>	<a href="#">Form of Placement Agent Warrant</a>					
<a href="#">5.1</a>	<a href="#">Opinion of Troutman Pepper Hamilton Sanders LLP</a>					<a href="#">X</a>
<a href="#">10.1</a>	<a href="#">Second Amended and Restated Founders Agreement between Fortress Biotech, Inc. and Mustang Bio, Inc., dated July 26, 2016</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.1</a>	
<a href="#">10.2</a>	<a href="#">Management Services Agreement between Fortress Biotech, Inc. and Mustang Bio, Inc., dated March 13, 2015</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.2</a>	

Exhibit No.	Description	Form	File Number	Date	Exhibit No.	Filed Herewith
<a href="#">10.3</a>	<a href="#">Future Advance Promissory Note to Fortress Biotech, Inc., dated May 5, 2016</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.3</a>	
<a href="#">10.4</a>	<a href="#">Promissory Note to NSC Biotech Venture Fund I, LLC, dated July 5, 2016</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.4</a>	
<a href="#">10.5</a>	<a href="#">License Agreement by and between Mustang Bio, Inc. and City of Hope, dated March 17, 2015 #</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.6</a>	
<a href="#">10.6</a>	<a href="#">Sponsored Research Agreement by and between Mustang Bio, Inc. and City of Hope, dated March 17, 2015</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.7</a>	
<a href="#">10.7</a>	<a href="#">Agreement by and between Mustang Bio, Inc. and Chord Advisors, LLC, dated April 8, 2016</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.10</a>	
<a href="#">10.8</a>	<a href="#">Board Advisory Services Agreement by and between Mustang Bio, Inc. and Caribe BioAdvisors, LLC</a>	<a href="#">10-K</a>	<a href="#">000-5568</a>	<a href="#">March 31, 2017</a>	<a href="#">10.11</a>	
<a href="#">10.9</a>	<a href="#">Exclusive License Agreement by and between Mustang Bio, Inc. and The Regents of the University of California, dated March 17, 2017 #</a>	<a href="#">10-Q</a>	<a href="#">000-5568</a>	<a href="#">August 14, 2017</a>	<a href="#">10.4</a>	
<a href="#">10.10</a>	<a href="#">Exclusive License Agreement (IV/ICV) by and between Mustang Bio, Inc. and City of Hope, dated February 17, 2017 #</a>	<a href="#">10-Q</a>	<a href="#">000-55668</a>	<a href="#">August 14, 2017</a>	<a href="#">10.5</a>	
<a href="#">10.11</a>	<a href="#">Amended and Restated Exclusive License Agreement (CD123) by and between Mustang Bio, Inc. and City of Hope, dated February 17, 2017 #</a>	<a href="#">10-K</a>	<a href="#">001-3891</a>	<a href="#">March 31, 2017</a>	<a href="#">10.14</a>	
<a href="#">10.12</a>	<a href="#">Amended and Restated Exclusive License Agreement (IL13Ra2) by and between Mustang Bio, Inc. and City of Hope, dated February 17, 2017 #</a>	<a href="#">10-K</a>	<a href="#">000-5568</a>	<a href="#">March 31, 2017</a>	<a href="#">10.15</a>	
<a href="#">10.13</a>	<a href="#">Amended and Restated Exclusive License Agreement (Spacer) by and between Mustang Bio, Inc. and City of Hope, dated February 17, 2017 #</a>	<a href="#">10-K</a>	<a href="#">000-5568</a>	<a href="#">March 31, 2017</a>	<a href="#">10.16</a>	

Exhibit No.	Description	Form	File Number	Date	Exhibit No.	Filed Herewith
<a href="#">10.14</a>	<a href="#">Employment Agreement between Manuel Litchman and Mustang Bio, Inc., effective as of April 24, 2017 †</a>	<a href="#">8-K</a>	<a href="#">000-5568</a>	<a href="#">April 24, 2017</a>	<a href="#">10.1</a>	
<a href="#">10.15</a>	<a href="#">License Agreement (CSI) by and between Mustang Bio, Inc. and City of Hope, dated May 31, 2017 #</a>	<a href="#">10-Q/A</a>	<a href="#">001-38191</a>	<a href="#">November 14, 2017</a>	<a href="#">10.1</a>	
<a href="#">10.16</a>	<a href="#">License Agreement (PSCA) by and between Mustang Bio, Inc. and City of Hope, dated May 31, 2017 #</a>	<a href="#">10-Q/A</a>	<a href="#">001-38191</a>	<a href="#">November 14, 2017</a>	<a href="#">10.2</a>	
<a href="#">10.17</a>	<a href="#">License Agreement (HER2) by and between Mustang Bio, Inc. and City of Hope, dated May 31, 2017 #</a>	<a href="#">10-Q/A</a>	<a href="#">001-38191</a>	<a href="#">November 14, 2017</a>	<a href="#">10.3</a>	
<a href="#">10.18</a>	<a href="#">Lease Agreement by and between Mustang Bio, Inc. and WCS - 377 Plantation Street, Inc., dated October 27, 2017</a>	<a href="#">10-Q</a>	<a href="#">001-3891</a>	<a href="#">November 14, 2017</a>	<a href="#">10.1</a>	
<a href="#">10.19</a>	<a href="#">Sublease Agreement by and between Mustang Bio, Inc., and The Paul Revere Life Insurance Company, dated June 14, 2022</a>	<a href="#">10-K</a>	<a href="#">001-3891</a>	<a href="#">March 30, 2023</a>	<a href="#">10.22</a>	
<a href="#">10.20</a>	<a href="#">First Amendment to Sublease Agreement by and between Mustang Bio, Inc. and The Paul Revere Life Insurance Company, dated October 25, 2022</a>	<a href="#">10-K</a>	<a href="#">001-3891</a>	<a href="#">March 30, 2023</a>	<a href="#">10.23</a>	
<a href="#">10.21</a>	<a href="#">Second Amendment to Sublease, dated April 27, 2023, between the Company and The Paul Revere Life Insurance Company</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 20, 2023</a>	<a href="#">10.2</a>	
<a href="#">10.22</a>	<a href="#">Third Amendment to Sublease, dated June 15, 2023, between the Company and The Paul Revere Life Insurance Company</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 20, 2023</a>	<a href="#">10.3</a>	
<a href="#">10.23</a>	<a href="#">Mustang Bio, Inc. 2016 Incentive Plan †</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.8</a>	
<a href="#">10.24</a>	<a href="#">Mustang Bio, Inc. Non-Employee Directors Compensation Plan †</a>	<a href="#">10-12G</a>	<a href="#">000-5568</a>	<a href="#">July 28, 2016</a>	<a href="#">10.9</a>	
<a href="#">10.25</a>	<a href="#">Amendment to Mustang Bio, Inc. 2016 Incentive Plan</a>	<a href="#">DEF 14A</a>	<a href="#">001-3891</a>	<a href="#">April 30, 2018</a>	<a href="#">N/A</a>	

Exhibit No.	Description	Form	File Number	Date	Exhibit No.	Filed Herewith
<a href="#">10.26</a>	<a href="#">Second Amendment to the Mustang Bio, Inc. 2016 Equity Incentive Plan, dated June 17, 2021 †</a>	<a href="#">8-K</a>	<a href="#">001-3891</a>	<a href="#">June 22, 2021</a>	<a href="#">10.1</a>	
<a href="#">10.27</a>	<a href="#">Third Amendment to Mustang Bio, Inc. 2016 Equity Incentive Plan, dated June 21, 2022 †</a>	<a href="#">8-K</a>	<a href="#">001-3891</a>	<a href="#">June 24, 2022</a>	<a href="#">10.1</a>	
<a href="#">10.28</a>	<a href="#">Form of Option Agreement under the Mustang Bio, Inc. 2016 Incentive Plan</a>	<a href="#">10-K</a>	<a href="#">001-3891</a>	<a href="#">March 11, 2024</a>	<a href="#">10.28</a>	
<a href="#">10.29</a>	<a href="#">Form of Restricted Stock Unit Agreement under the Mustang Bio, Inc. 2016 Incentive Plan</a>	<a href="#">10-K</a>	<a href="#">001-3891</a>	<a href="#">March 11, 2024</a>	<a href="#">10.29</a>	
<a href="#">10.30</a>	<a href="#">Form of Director Stock Award Agreement under the Mustang Bio, Inc. Non-Employee Directors Compensation Plan</a>	<a href="#">10-K</a>	<a href="#">001-3891</a>	<a href="#">March 11, 2024</a>	<a href="#">10.30</a>	
<a href="#">10.31</a>	<a href="#">Mustang Bio, Inc. 2019 Employee Stock Purchase Plan †</a>	<a href="#">10-Q</a>	<a href="#">001-3891</a>	<a href="#">August 9, 2019</a>	<a href="#">10.1</a>	
<a href="#">10.32</a>	<a href="#">Amendment to the Mustang Bio, Inc. 2019 Employee Stock Purchase Plan, dated June 17, 2021 †</a>	<a href="#">8-K</a>	<a href="#">001-3891</a>	<a href="#">June 22, 2021</a>	<a href="#">10.2</a>	
<a href="#">10.33</a>	<a href="#">Amendment No. 2 to the Mustang Bio, Inc. 2019 Employee Stock Purchase Plan, dated June 21, 2023 †</a>	<a href="#">8-K</a>	<a href="#">001-3891</a>	<a href="#">June 21, 2023</a>	<a href="#">10.1</a>	
<a href="#">10.34</a>	<a href="#">Loan and Security Agreement by and between Mustang Bio, Inc., the Borrower, the Lenders, and Runway Growth Finance Corp. (as agent), dated March 4, 2022</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">March 8, 2022</a>	<a href="#">99.1</a>	
<a href="#">10.35</a>	<a href="#">First Amendment to Loan and Security Agreement by and between Mustang Bio, Inc., the Borrower, the Lenders and Runway Growth Finance Corp. (as agent), dated December 7, 2022</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">December 13, 2022</a>	<a href="#">10.1</a>	
<a href="#">10.36</a>	<a href="#">Consulting Agreement by and between Mustang Bio, Inc. and Danforth Advisors, LLC dated March 17, 2022</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">April 22, 2022</a>	<a href="#">99.1</a>	
<a href="#">10.37</a>	<a href="#">Manufacturing Services Agreement, dated July 28, 2023, between the Company and uBriGene (Boston) Biosciences, Inc.</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 31, 2023</a>	<a href="#">10.1</a>	

Exhibit No.	Description	Form	File Number	Date	Exhibit No.	Filed Herewith
<a href="#">10.38</a>	<a href="#">Sub-Contracting Manufacturing Services Agreement, dated July 28, 2023, between the Company and uBriGene (Boston) Biosciences, Inc.</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">July 31, 2023</a>	<a href="#">10.2</a>	
<a href="#">10.39</a>	<a href="#">Form of Securities Purchase Agreement, dated October 26, 2023, by and between the Company and the purchaser party thereto</a>	<a href="#">8-K</a>	<a href="#">001-38191</a>	<a href="#">October 30, 2023</a>	<a href="#">10.1</a>	
<a href="#">10.40</a>	<a href="#">Form of Securities Purchase Agreement</a>					<input checked="" type="checkbox"/>
<a href="#">23.1</a>	<a href="#">Consent of Independent Registered Public Accounting Firm, KPMG LLP</a>					<input checked="" type="checkbox"/>
<a href="#">23.2</a>	<a href="#">Consent of Troutman Pepper Hamilton Sanders LLP (included in Exhibit 5.1)</a>					<input checked="" type="checkbox"/>
<a href="#">24.1^</a>	<a href="#">Power of Attorney</a>					
<a href="#">107</a>	<a href="#">Filing Fee Table</a>					<input checked="" type="checkbox"/>

# Portions of this Exhibit have been omitted pursuant to Item 601(b)(1)(iv) of Regulation S-K.

† Management contract or compensatory plan.

^ Previously filed.

**(b) Financial Statement Schedules.**

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

**Item 17. Undertakings.**

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
  - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act 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 range may be reflected in the form of prospectus filed with the U.S. Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; 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 paragraphs (1)(i), (1)(ii) and (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 Securities and Exchange Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
- (5) That for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of securities, the undersigned registrant undertakes 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;
  - (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.

- (6) That, for 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.
- (7) 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 shall be deemed to be part of this registration statement as of the time it was declared effective.
- (8) 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.

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 any charter provision, by law 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 Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

### SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Worcester, Commonwealth of Massachusetts, on this 29<sup>th</sup> day of April, 2024.

#### MUSTANG BIO, INC.

By: /s/ Manuel Litchman, M.D.

Manuel Litchman, M.D.

Chief Executive Officer and President

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</u>	<u>Date</u>
<u>/s/ Manuel Litchman</u> Manuel Litchman, M.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	April 29, 2024
<u>/s/ James Murphy</u> James Murphy	Interim Chief Financial Officer (Principal Financial and Accounting Officer)	April 29, 2024
<u>*</u> Michael S. Weiss	Chairman of the Board of Directors and Executive Chairman	April 29, 2024
<u>*</u> Adam Chill	Director	April 29, 2024
<u>*</u> Neil Herskowitz	Director	April 29, 2024
<u>*</u> Lindsay A. Rosenwald, M.D.	Director	April 29, 2024
<u>*</u> Michael Zelefsky, M.D.	Director	April 29, 2024
*By: <u>/s/ James Murphy</u> James Murphy Attorney-in-fact		

Troutman Pepper Hamilton Sanders LLP  
875 Third Avenue  
New York, NY 10022  
troutman.com



April 29, 2024

Mustang Bio, Inc.  
377 Plantation Street  
Worcester, Massachusetts 01605

Re: Registration Statement on Form S-1 (File No. 333-278006)

Ladies and Gentlemen:

We have acted as counsel to Mustang Bio, Inc., a Delaware corporation (the “**Company**”), in connection with the preparation and filing of a Registration Statement on Form S-1 (Registration No. 333-278006) filed with the Securities and Exchange Commission (the “**Commission**”) under the Securities Act of 1933, as amended (the “**Securities Act**”) (as amended, the “**Registration Statement**”), and the related prospectus contained therein (the “**Prospectus**”). We are rendering this opinion in connection with the filing by the Company of the Registration Statement relating to the offer and sale by the Company (the “**Offering**”) of up to: (i) \$5,000,000 of (A) shares (the “**Shares**”) of common stock, par value \$0.0001 per share, of the Company (the “**Common Stock**”), (B) pre-funded warrants to purchase shares of Common Stock (the “**Pre-Funded Warrants**”), (C) the shares of Common Stock issuable from time to time upon exercise of the Pre-funded Warrants (the “**Pre-Funded Warrant Shares**”), (D) series A-1 warrants to purchase shares of Common Stock (the “**Series A-1 Warrants**”), (E) shares of Common Stock issuable from time to time upon exercise of the Series A-1 Warrants (the “**Series A-1 Warrant Shares**”), (F) series A-2 warrants to purchase shares of Common Stock (the “**Series A-2 Warrants**”), (G) shares of Common Stock issuable from time to time upon the exercise of the Series A-2 Warrants (the “**Series A-2 Warrant Shares**”); (H) series A-3 warrants to purchase shares of Common Stock (the “**Series A-3 Warrants**,” and together with the Series A-1 Warrants and the Series A-2 Warrants, the “**Investor Warrants**”), and (I) shares of Common Stock issuable from time to time upon exercise of the Series A-3 Warrants (the “**Series A-3 Warrant Shares**,” and together with the Series A-1 Warrant Shares and the Series A-2 Warrant Shares, the “**Investor Warrant Shares**”), and (ii) warrants (the “**Placement Agent Warrants**”) to purchase up to an amount of shares of Common Stock equal to 6.0% of the shares of Common Stock and Pre-Funded Warrants sold in the offering as contemplated pursuant to the Registration Statement (the “**Placement Agent Warrant Shares**,” and, together with the Shares, the Investor Warrants, the Investor Warrant Shares, the Pre-Funded Warrants and the Pre-Funded Warrant Shares, the “**Securities**”). The Securities are to be issued and sold by the Company pursuant to the Registration Statement. This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related the Prospectus, other than as expressly stated herein with respect to the issue of the Securities.

Mustang Bio, Inc.  
April 29, 2024  
Page 2



In rendering the opinion set forth herein, we have examined the originals, or photostatic or certified copies, of (i) the Certificate of Incorporation (the “**Certificate of Incorporation**”) and the Bylaws (the “**Bylaws**”) of the Company as currently, each as amended to date and as filed as exhibits to the Registration Statement, (ii) certain resolutions of the Board of Directors of the Company related to the filing of the Registration Statement and the related Prospectus, the authorization and issuance of the Securities and related matters, (iii) the Registration Statement and related Prospectus, and all exhibits to the Registration Statement, (iv) the form of Securities Purchase Agreement, to be entered into by and among the Company and the purchasers identified on the signature pages thereto, substantially in the form filed as Exhibit 10.40 to the Registration Statement (the “**Securities Purchase Agreement**”), (v) the form of Pre-Funded Warrant, (vi) the form of Series A-1 Warrant, (vii) the form of Series A-2 Warrant, (viii) the form of Series A-3 Warrant, (ix) the form of Placement Agent Warrant, and (x) such other records, documents and instruments as we deemed relevant and necessary for purposes of the opinion stated herein. In making the foregoing examination we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as photostatic or certified copies, and the authenticity of the originals of such copies. As to all questions of fact material to this opinion, where such facts have not been independently established, we have relied, to the extent we have deemed reasonably appropriate, upon representations or certificates of officers of the Company or governmental officials.

This opinion is limited in all respects to the General Corporation Law of the State of Delaware and the applicable laws of the State of New York, and we express no opinion as to the effect on the matters covered by this letter of the laws of any other jurisdiction.

Based upon the foregoing and subject to the limitations, qualifications and assumptions set forth herein, we are of the opinion that (i) the Shares have been duly authorized for issuance, and when issued and paid for by the purchasers in accordance with the terms of the Prospectus and the Securities Purchase Agreement, will be validly issued, fully paid and non-assessable, (ii) when the Pre-Funded Warrants have been duly executed and delivered by the Company, and when paid for by the purchasers in accordance with the terms of the Prospectus and the Securities Purchase Agreement, the Pre-Funded Warrants will constitute the legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, (iii) the Pre-Funded Warrant Shares have been duly authorized and, when issued upon the due exercise of the Pre-Funded Warrants, will be validly issued, fully paid and non-assessable, (iv) when the Investor Warrants have been duly executed and delivered by the Company and paid for by the purchasers in accordance with the terms of the Prospectus and the Securities Purchase Agreement, the Investor Warrants will constitute the legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, (v) the Investor Warrant Shares have been duly authorized and, when issued upon the due exercise of the Investor Warrants, will be validly issued, fully paid and non-assessable, (vi) the Placement Agent Warrants have been duly executed and delivered by the Company and paid for in accordance with the terms of the Prospectus and the Securities Purchase Agreement, the Placement Agent Warrants will constitute the legal, valid and binding obligation of the Company, enforceable against the Company in accordance with their terms, and (vii) the Placement Agent Warrant Shares, have been duly authorized and, when issued upon the due exercise of the Placement Agent Warrants, will be validly issued, fully paid and non-assessable.

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The opinion set forth under (ii), (iv), (vi) above are subject to (1) applicable bankruptcy, insolvency, reorganization, fraudulent conveyance, fraudulent transfer, fraudulent obligation, moratorium or other similar laws affecting generally the enforceability of creditors' rights and remedies or the collection of debtor's obligations from time to time in effect, and (2) general principles of equity, regardless of whether such enforceability is considered in a proceeding in equity or at law, including the application of principles of good faith, fair dealing, course of dealing, course of performance, commercial reasonableness, materiality, unconscionability and conflict with public policy and other similar principles, or other law relating to or affecting creditors' rights generally and general principles of equity.

Any additional Securities registered in reliance on Rule 462(b) under the Securities Act in connection with the offering are hereby expressly covered by this opinion. As used in this opinion, the term "Registration Statement" shall include any additional registration statement filed pursuant to Rule 462(b) under the Securities Act in connection with the offering and the term "Prospectus" shall include any prospectus deemed to be included in any such additional registration statement.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Securities Act. We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Registration Statement under the heading "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Troutman Pepper Hamilton Sanders LLP  
Troutman Pepper Hamilton Sanders LLP

## SERIES [A-1][A-2][A-3] COMMON STOCK PURCHASE WARRANT

## MUSTANG BIO, INC.

Warrant Shares: \_\_\_\_\_

Initial Exercise Date: \_\_\_\_\_, 2024

THIS SERIES [A-1][A-2][A-3] COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that, for value received, \_\_\_\_\_ 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 [Stockholder Approval Date] (the “Initial Exercise Date”) and on or prior to 5:00 p.m. (New York City time) on the date that is the \_\_\_\_\_<sup>2</sup> anniversary of the Initial Exercise Date, provided that, if such date is not a Trading Day, the date that is the immediately following Trading Day (the “Termination Date”) but not thereafter, to subscribe for and purchase from Mustang Bio, Inc., a Delaware corporation (the “Company”), up to \_\_\_\_\_ shares of Common Stock (as subject to adjustment hereunder, the “Warrant Shares”). The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 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.

“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 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 Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the 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 reasonable fees and expenses of which shall be paid by the Company.

<sup>1</sup> Replace bracketed language with “date hereof” if and only if the Per Share Purchase Price (as defined in the Purchase Agreement) equals or exceeds the sum of (a) the applicable “Minimum Price” per share under Nasdaq rule 5635(d) and (b) \$0.125 per whole Warrant Share.

<sup>2</sup> Series A-1 Warrant: insert “five (5) year”

Series A-2 Warrant: insert “twenty-four (24) month”

Series A-3 Warrant: insert “nine (9) month”

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

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

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

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

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

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

“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.

“Purchase Agreement” means the securities purchase agreement, dated as of \_\_\_\_\_, 2024, by and between the Company and each of the purchasers signatory thereto.

“Registration Statement” means the Company’s registration statement on Form S-1 (File No. 333-278006).

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

[“Stockholder Approval” means such approval as may be required by the applicable rules and regulations of the Nasdaq Stock Market LLC (or any successor entity) from the stockholders of the Company with respect to issuance of all the Warrants and the Warrant Shares upon the exercise thereof.

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

“Trading Day” means a day on which the Common Stock is traded on a Trading Market.

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

“Transfer Agent” means VStock Transfer LLC, the current transfer agent of the Company, with a mailing address of 18 Lafayette Place, Woodmere, NY 11598, and any successor transfer agent of the Company.

“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 Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the 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 reasonable fees and expenses of which shall be paid by the Company.

“Warrants” means this Warrant and other Common Stock purchase warrants issued by the Company pursuant to the Registration Statement.

## Section 2. Exercise.

<sup>3</sup> Replace bracketed language with “date hereof” if and only if the Per Share Purchase Price (as defined in the Purchase Agreement) equals or exceeds the sum of (a) the applicable “Minimum Price” per share under Nasdaq rule 5635(d) and (b) \$0.125 per whole Warrant Share.

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a) Exercise of Warrant. Subject to the provisions of Section 2(e) herein, 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 in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) 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 of immediately available funds or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) 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. The Company shall have no obligation to inquire with respect to or otherwise confirm the authenticity of the signature(s) contained on any Notice of Exercise nor the authority of the person so executing such Notice of Exercise. 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 as soon as reasonably practicable following 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) Business Day of 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.

b) Exercise Price. The exercise price per share of Common Stock under this Warrant shall be \$\_\_\_\_, subject to adjustment hereunder (the “Exercise Price”).

c) Cashless Exercise. If at the time of exercise hereof, after the Initial Exercise Date and on or before the Termination Date, 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, 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:

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(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) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) 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 Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. (“Bloomberg”) as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof 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 both executed and delivered pursuant to Section 2(a) hereof after 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.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

d) Mechanics of Exercise.

- i. 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 or Withdrawal at Custodian system ("DWAC") if the Company's transfer agent 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) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, 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 earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) 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) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. 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 shares of Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the third 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 shares of 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 4:00 p.m. (New York City time) on the Trading Day prior to the Initial Exercise Date, which may be delivered at any time after the time of execution of the 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.

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ii. 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 remaining available under this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares on a timely basis pursuant to Section 2(d)(i) by the Warrant Share Delivery Date (subject to receipt of the aggregate exercise price for the applicable exercise), then the Holder will have the right to rescind such exercise.

iv. 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(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date (subject to receipt of the aggregate exercise price for the applicable exercise (other than in the case of a cashless exercise) and other than any such failure that is solely due to any action by the Holder with respect to such exercise), 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 reasonable and customary 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 (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 shares of 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.

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v. 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.

vi. 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 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-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-day electronic delivery of the Warrant Shares.

vii. 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.

e) **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, nonexercised 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 nonconverted 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(e), 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(e) 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 (including any determination as to group status pursuant to the next sentence). 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(e), 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 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% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) 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 Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. 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(e) 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.

### Section 3. Certain Adjustments.

a) **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 its 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 the 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(a) 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.

b) [RESERVED]

c) **Subsequent Rights Offerings.** In addition to any adjustments pursuant to Section 3(a) above, if at any time that this Warrant is outstanding 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).

d) **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) of 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).

e) **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 (other than for the purpose of changing the Company's name and/or the jurisdiction of incorporation of the Company or a holding company for the Company), (ii) the Company (and all of its Subsidiaries, taken as a whole), 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 more than 50% of the voting power of the capital stock 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, other than Fortress Biotech, Inc., acquires more than 50% of the voting power of the capital stock 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(e) 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(e) 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 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 of the Successor Entity (which Successor 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 determined as of the day of consummation of the applicable 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 Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the 100 day volatility 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 VWAP of the Common Stock for the fifteen (15) Trading Day period immediately prior to the date of the Holder's election pursuant to this Section 3(e), (D) a remaining option time equal to the time between the date of the public announcement of the applicable 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 Business Days of 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 in accordance with the provisions of this Section 3(e) 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 which 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 pursuant 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(e) 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.

f) **Calculations.** All calculations under this Section 3 shall be made to the nearest cent 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.

g) **Notice to Holder.**

i. **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.

ii. **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 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 the 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. 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.

h) Voluntary Adjustment By Company. Subject to the rules and regulations of the Trading Market, 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 of the Company.

#### Section 4. Transfer of Warrant.

a) Transferability. 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 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 of the date on which the Holder delivers a duly executed 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.

b) 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(a), 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 Exercise Date and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) 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.

#### Section 5. Miscellaneous.

a) 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(d)(i), 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 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) 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.

c) 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.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares 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 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).

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.

Before taking any action which 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.

e) 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 New York, without regard to the principles of conflicts of law thereof. The Company and, by accepting this Warrant, the Holder each agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against the Company or the Holder or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. The Company and, by accepting this Warrant, the Holder each hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, 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. The Company and, by accepting this Warrant, the Holder each 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 it 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 the Company or the Holder 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.

f) 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.

g) 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. Without limiting any other provision of this Warrant, 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.

h) 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 377 Plantation Street, Worcester, Massachusetts 01605, Attention: Chief Executive Officer, email address: [REDACTED], or such email address or address as the Company may specify for such purposes by notice to the Holder. 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 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 on a 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 mailing, 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 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.

i) 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.

j) 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.

k) 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.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) 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.

n) 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.

o) Electronic Signatures. Electronically scanned and transmitted signatures, including by email attachment, shall be deemed originals for all purposes of this Warrant.

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(Signature Page Follows)

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

**MUSTANG BIO, INC.**

By: \_\_\_\_\_  
Name:  
Title:

**NOTICE OF EXERCISE**

TO: **MUSTANG BIO, 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; or
  - if permitted, the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).
- (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:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_  
*Signature of Authorized Signatory of Investing Entity:* \_\_\_\_\_  
Name of Authorized Signatory: \_\_\_\_\_  
Title of Authorized Signatory: \_\_\_\_\_  
Date: \_\_\_\_\_

**ASSIGNMENT FORM**

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

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

Name: \_\_\_\_\_  
(Please Print)

Address: \_\_\_\_\_  
(Please Print)

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Dated: \_\_\_\_\_, \_\_\_\_\_

Holder's Signature: \_\_\_\_\_

Holder's Address: \_\_\_\_\_



## SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this “Agreement”) is dated as of \_\_\_\_\_, 2024, between Mustang Bio, Inc., a Delaware corporation (the “Company”), and each purchaser identified on the signature pages hereto (each, including its successors and assigns, a “Purchaser” and collectively the “Purchasers”).

WHEREAS, subject to the terms and conditions set forth in this Agreement and pursuant to an effective registration statement under the Securities Act (as defined below), the Company desires to issue and sell to each Purchaser, and each Purchaser, severally and not jointly, desires to purchase from the Company, securities of the Company as more fully described in this Agreement.

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration the receipt and adequacy of which are hereby acknowledged, the Company and each Purchaser agree as follows:

### ARTICLE I DEFINITIONS

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

“Acquiring Person” shall have the meaning ascribed to such term in Section 4.5.

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

“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.

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

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

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

“Closing Date” means the Trading Day on which all of the Transaction Documents have been executed and delivered by the applicable parties thereto, and all conditions precedent to (i) the Purchasers’ obligations to pay the Subscription Amount and (ii) the Company’s obligations to deliver the Securities, in each case, have been satisfied or waived, but in no event later than the second (2<sup>nd</sup>) Trading Day following the date hereof.

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

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

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

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

“Common Warrants” means, collectively, the Series A-1 Warrants, the Series A-2 Warrants and the Series A-3 Warrants.

“Company Counsel” means Troutman Pepper Hamilton Sanders LLP, with offices located at 301 S. College Street, 34<sup>th</sup> Floor, Charlotte, North Carolina 28202.

“Disclosure Schedules” means the Disclosure Schedules of the Company delivered concurrently herewith.

“Disclosure Time” means, (i) if this Agreement is signed on a day that is not a Trading Day or after 9:00 a.m. (New York City time) and before midnight (New York City time) on any Trading Day, 9:01 a.m. (New York City time) on the Trading Day immediately following the date hereof, unless otherwise instructed as to an earlier time by the Placement Agent, and (ii) if this Agreement is signed between midnight (New York City time) and 9:00 a.m. (New York City time) on any Trading Day, no later than 9:01 a.m. (New York City time) on the date hereof, unless otherwise instructed as to an earlier time by the Placement Agent.

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

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

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

“Exempt Issuance” means the issuance of (a) shares of Common Stock, restricted stock, restricted stock units or options to employees, officers, consultants or directors of the Company pursuant to any stock or option plan duly adopted for such purpose or an “inducement grant” pursuant to Nasdaq Listing Rule 5635(c),

authorized by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company, provided that such securities issued to consultants are issued as “restricted securities” (as defined in Rule144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith during the prohibition period in Section4.12(a)herein, (b)securities upon the exercise or exchange of or conversion of any Securities issued hereunder, warrants to the Placement Agent in connection with the transactions pursuant to this Agreement and any securities upon exercise of warrants to the Placement Agent and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities (other than in connection with stock splits or combinations) or to extend the term of such securities, (c)securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that such securities are issued as “restricted securities” (as defined in Rule144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith during the prohibition period in Section4.12(a)herein, and provided that any such issuance shall only be to a Person (or to the equityholders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities and (d)up to \$\_\_\_ of Shares and Warrants issued to other purchasers pursuant to the Prospectus concurrently with the Closing at the Per Share Purchase Price, less than aggregate Subscription Amount pursuant to this Agreement.

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

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

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

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

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

“Intellectual Property Rights” shall have the meaning ascribed to such term in Section 3.1(p).

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

“Lock-Up Agreement” means the Lock-Up Agreement, dated as of the date hereof, by and among the Company and the directors and executive officers of the Company and each holder of Common Stock and Common Stock Equivalents holding, on a fully diluted basis, 10% or more of the Company’s issued and outstanding Common Stock, in the form of Exhibit B attached hereto.

“Material Adverse Effect” shall have the meaning assigned to such term in Section 3.1(b).

“Material Permits” shall have the meaning ascribed to such term in Section 3.1(n).

“Per Share Purchase Price” equals \$\_\_\_, subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement and prior to the Closing Date, provided that the purchase price per Prefunded Warrant shall be the Per Share Purchase Price minus \$0.0001.

“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.

“Pharmaceutical Product” shall have the meaning ascribed to such term in Section 3.1(hh).

“Placement Agent” means H.C. Wainwright & Co., LLC.

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

“Prefunded Warrants” means, collectively, the Prefunded Common Stock purchase warrants delivered to the Purchasers at the Closing in accordance with Section 2.2(a) hereof, which Prefunded Warrants shall be exercisable immediately and shall expire when exercised in full, in the form of Exhibit A-2 attached hereto.

“Preliminary Prospectus” means any preliminary prospectus included in the Registration Statement, as originally filed or as part of any amendment thereto, or filed with the Commission pursuant to Rule 424(a) of the rules and regulations of the Commission under the Securities Act.

“Pricing Prospectus” means (i)the Preliminary Prospectus relating to the Securities that was included in the Registration Statement immediately prior to \_\_\_ a.m./p.m. (New York City time) on the date hereof and (ii) any free writing prospectus (as defined in the Securities Act) identified on Schedule I hereto, taken together.

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

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

“Purchaser Party” shall have the meaning ascribed to such term in Section 4.8.

“Registration Statement” means the effective registration statement on FormS-1 with Commission (File No.333-278006), which registers the sale of the Shares, the Warrants and the Warrant Shares to the Purchasers, including all information, documents and exhibits filed with or incorporated by reference into such registration statement, and includes any Rule 462(b) Registration Statement.

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

“Restricted Period” shall have the meaning ascribed to such term in Section 4.12(a).

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

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

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

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

“Securities” means the Shares, the Warrants and the Warrant Shares.

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

“Series A-1 Warrant Shares” means the shares of Common Stock issuable upon exercise of the Series A-1 Warrants.

“Series A-2 Warrant Shares” means the shares of Common Stock issuable upon exercise of the Series A-2 Warrants.

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“Series A-3 Warrant Shares” means the shares of Common Stock issuable upon exercise of the Series A-3 Warrants.

“Series A-1 Warrants” means, collectively, the Series A-1 Common Stock purchase warrants delivered to the Purchasers at the Closing in accordance with Section 2.2(a) hereof, which Series A-1 Warrants shall be exercisable [on and after the Stockholder Approval Date]<sup>1</sup> and have a term of exercise equal to five (5) years after the initial exercise date, in the form of Exhibit A-1 attached hereto.

“Series A-2 Warrants” means, collectively, the Series A-2 Common Stock purchase warrants delivered to the Purchasers at the Closing in accordance with Section 2.2(a) hereof, which Series A-2 Warrants shall be exercisable [on and after the Stockholder Approval Date]<sup>2</sup> and have a term of exercise equal to twenty-four (24) months after the initial exercise date, in the form of Exhibit A-1 attached hereto.

“Series A-3 Warrants” means, collectively, the Series A-3 Common Stock purchase warrants delivered to the Purchasers at the Closing in accordance with Section 2.2(a) hereof, which Series A-3 Warrants shall be exercisable [on and after the Stockholder Approval Date]<sup>3</sup> and have a term of exercise equal to nine (9) months after the initial exercise date, in the form of Exhibit A-1 attached hereto.

“Shares” means the shares of Common Stock issued or issuable to each Purchaser pursuant to this Agreement, but excluding the Warrant Shares.

“Short Sales” means all “short sales” as defined in Rule 200 of Regulation SHO under the Exchange Act (but shall not be deemed to include locating and/or borrowing shares of Common Stock).

“Stockholder Approval” means such approval as may be required by the applicable rules and regulations of the Nasdaq Stock Market LLC (or any successor entity) from the stockholders of the Company with respect to the issuance of all the Common Warrants and the Common Warrant Shares upon the exercise thereof.

“Stockholder Approval Date” means the date on which Stockholder Approval is received and deemed effective under Delaware law.<sup>4</sup>

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<sup>1</sup> Replace bracketed language with “immediately” if and only if the Per Share Purchase Price equals or exceeds the sum of (a) the applicable “Minimum Price” per share under Nasdaq rule 5635(d) and (b) \$0.125 per whole Common Warrant Share.

<sup>2</sup> Replace bracketed language with “immediately” if and only if the Per Share Purchase Price equals or exceeds the sum of (a) the applicable “Minimum Price” per share under Nasdaq rule 5635(d) and (b) \$0.125 per whole Common Warrant Share.

<sup>3</sup> Replace bracketed language with “immediately” if and only if the Per Share Purchase Price equals or exceeds the sum of (a) the applicable “Minimum Price” per share under Nasdaq rule 5635(d) and (b) \$0.125 per whole Common Warrant Share.

<sup>4</sup> NTD: Stockholder Approval concept to be removed if warrants will be immediately exercisable.

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“Subscription Amount” means, as to each Purchaser, the aggregate amount to be paid for Shares and/or Prefunded Warrants and Common Warrants purchased hereunder as specified below such Purchaser’s name on the signature page of this Agreement and next to the heading “Subscription Amount,” in United States dollars and in immediately available funds (minus, if applicable, a Purchaser’s aggregate exercise price of the Prefunded Warrants, which amounts shall be paid as and when such Prefunded Warrants are exercised for cash).

“Subsidiary” means any subsidiary of the Company as set forth on Schedule 3.1(a), and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

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

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

“Transaction Documents” means this Agreement, the Lock-Up Agreement, the Warrants, all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means VStock Transfer LLC, the current transfer agent of the Company, with a mailing address of 18 Lafayette Place, Woodmere, NY 11598,

and any successor transfer agent of the Company.

“Variable Rate Transaction” shall have the meaning ascribed to such term in Section 4.12(b).

“Warrants” means, collectively, the Common Warrants and the Prefunded Warrants.

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

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## ARTICLE II. PURCHASE AND SALE

2.1 Closing. On the Closing Date, upon the terms and subject to the conditions set forth herein, the Company agrees to sell, and the Purchasers, severally and not jointly, agree to purchase, up to an aggregate of \$ \_\_\_\_\_ of Shares and Common Warrants; provided, however, that, to the extent that a Purchaser determines, in its sole discretion, that such Purchaser (together with such Purchaser’s Affiliates, and any Person acting as a group together with such Purchaser or any of such Purchaser’s Affiliates) would beneficially own in excess of the Beneficial Ownership Limitation, or as such Purchaser may otherwise choose, in lieu of purchasing Shares such Purchaser may elect, by so indicating such election prior to their issuance, to purchase Prefunded Warrants in such manner to result in the same aggregate purchase price being paid by such Purchaser to the Company. The “Beneficial Ownership Limitation” shall be 4.99% (or, with respect to each Purchaser, at the election of such Purchaser at Closing, 9.99%) of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of the Securities on the Closing Date. Each Purchaser’s Subscription Amount as set forth on the signature page hereto executed by such Purchaser shall be made available for “Delivery Versus Payment” (“DVP”) settlement with the Company or its designee. The Company shall deliver to each Purchaser its respective Shares, Prefunded Warrants and Common Warrants as determined pursuant to Section 2.2(a), and the Company and each Purchaser shall deliver the other items set forth in Section 2.2 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.2 and 2.3, the Closing take place remotely by electronic transfer of the Closing documentation. Unless otherwise directed by the Placement Agent, settlement of the Shares shall occur via DVP (i.e., on the Closing Date, the Company shall issue the Shares registered in the Purchasers’ names and addresses and released by the Transfer Agent directly to the account(s) at the Placement Agent identified by each Purchaser; upon receipt of such Shares, the Placement Agent shall promptly electronically deliver such Shares to the applicable Purchaser, and payment therefor shall be made by the Placement Agent (or its clearing firm) by wire transfer to the Company). Each Purchaser acknowledges that, concurrently with the Closing and pursuant to the Prospectus, the Company may sell up to \$ \_\_\_\_\_ of Shares and Warrants to purchasers not party to this Agreement, less the aggregate Subscription Amount pursuant to this Agreement, and will issue to such purchasers such shares of Common Stock and Common Warrants and/or Prefunded Warrants and Common Warrants in the same form and at the same Per Share Purchase Price. Notwithstanding anything herein to the contrary, if at any time on or after the time of execution of this Agreement by the Company and an applicable Purchaser, through, and including the time immediately prior to the Closing (the “Pre-Settlement Period”), such Purchaser sells to any Person all, or any portion, of the Shares to be issued hereunder to such Purchaser at the Closing (collectively, the “Pre-Settlement Shares”), such Purchaser shall, automatically hereunder (without any additional required actions by such Purchaser or the Company), be deemed to be unconditionally bound to purchase, and the Company shall be deemed to be unconditionally bound to sell, such Pre-Settlement Shares at the Closing; provided, that the Company shall not be required to deliver any Pre-Settlement Shares to such Purchaser prior to the Company’s receipt of the purchase price of such Pre-Settlement Shares hereunder; and provided further that the Company hereby acknowledges and agrees that the forgoing shall not constitute a representation or covenant by such Purchaser as to whether or not during the Pre-Settlement Period such Purchaser shall sell any shares of Common Stock to any Person and that any such decision to sell any shares of Common Stock by such Purchaser shall solely be made at the time such Purchaser elects to effect any such sale, if any. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise (as defined in the Warrants) delivered on or prior to 12:00 p.m. (New York City time) on the Closing Date, which may be delivered at any time after the time of execution of this 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 Closing Date and the Closing Date shall be the Warrant Share Delivery Date (as defined in the Warrants) for purposes thereunder, provided that the payment of the aggregate exercise price is received by such Closing Date.

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### 2.2 Deliveries.

- (a) On or prior to the Closing Date (except as indicated below), the Company shall deliver or cause to be delivered to each Purchaser the following:
  - (i) this Agreement duly executed by the Company;
  - (ii) a legal opinion of Company Counsel directed to the Purchasers and the Placement Agent, in form and substance reasonably satisfactory to the Placement Agent;
  - (iii) subject to Section 2.1, the Company shall have provided each Purchaser with the Company’s wire instructions, on Company letterhead and executed by the Company’s Chief Executive Officer or Chief Financial Officer;
  - (iv) subject to Section 2.1, a copy of the irrevocable instructions to the Transfer Agent instructing the Transfer Agent to deliver on an expedited basis via The Depository Trust Company Deposit or Withdrawal at Custodian system (“DWAC”) Shares equal to such Purchaser’s Subscription Amount divided by the Per Share Purchase Price (minus the number of shares of Common Stock issuable upon exercise of such Purchaser’s Prefunded Warrant, if applicable), registered in the name of such Purchaser;
  - (v) a SeriesA-1 Warrant registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to 100% of the sum of such Purchaser’s Shares and Prefunded Warrant Shares on the date hereof, with an exercise price equal to \$ \_\_\_\_\_, subject to adjustment therein;
  - (vi) a SeriesA-2 Warrant registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to 100% of the sum of such Purchaser’s Shares and Prefunded Warrant Shares on the date hereof, with an exercise price equal to \$ \_\_\_\_\_, subject to adjustment therein;
  - (vii) a SeriesA-3 Warrant registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to 100% of the sum of such Purchaser’s Shares and Prefunded Warrant Shares on the date hereof, with an exercise price equal to \$ \_\_\_\_\_, subject to adjustment therein;
  - (viii) if applicable, for each Purchaser of Prefunded Warrants pursuant to Section 2.1, a Prefunded Warrant registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to the portion of such Purchaser’s Subscription Amount applicable to Prefunded Warrant divided by the Per Share Purchase Price minus \$0.0001, with an exercise price equal to \$0.0001, subject to adjustment therein;

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- (ix) on the date hereof, the duly executed Lock-Up Agreements; and
  - (x) the Pricing Prospectus and the Prospectus (which may be delivered in accordance with Rule 172 under the Securities Act).
- (b) On or prior to the Closing Date, each Purchaser shall deliver or cause to be delivered to the Company the following:
- (i) this Agreement duly executed by such Purchaser; and
  - (ii) such Purchaser's Subscription Amount (less the aggregate exercise price of the Prefunded Warrants issuable to such Purchaser hereunder, if applicable), which shall be made available for "Delivery Versus Payment" settlement with the Company or its designee.

### 2.3 Closing Conditions.

- (a) The obligations of the Company hereunder in connection with the Closing are subject to the following conditions being met:
- (i) the accuracy in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) on the Closing Date of the representations and warranties of the Purchasers contained herein (unless such representation or warranty is as of a specific date therein in which case they shall be accurate in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) as of such date);
  - (ii) all obligations, covenants and agreements of each Purchaser required to be performed at or prior to the Closing Date shall have been performed; and
  - (iii) the delivery by each Purchaser of the items set forth in Section 2.2(b) of this Agreement.
- (b) The respective obligations of the Purchasers hereunder in connection with the Closing are subject to the following conditions being met:
- (i) the accuracy in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) when made and on the Closing Date of the representations and warranties of the Company contained herein (unless such representation and warranty is as of a specific date therein in which case they shall be accurate in all material respects or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) as of such date);

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- (ii) all obligations, covenants and agreements of the Company required to be performed at or prior to the Closing Date shall have been performed;
- (iii) the delivery by the Company of the items set forth in Section 2.2(a) of this Agreement;
- (iv) there shall have been no Material Adverse Effect with respect to the Company since the date hereof; and
- (v) from the date hereof to the Closing Date, trading in the Common Stock shall not have been suspended by the Commission or the Company's principal Trading Market, and, at any time prior to the Closing Date, trading in securities generally as reported by Bloomberg L.P. shall not have been suspended or limited, or minimum prices shall not have been established on securities whose trades are reported by such service, or on any Trading Market, nor shall a banking moratorium have been declared either by the United States or New York State authorities nor shall there have occurred any material outbreak or escalation of hostilities or other national or international calamity of such magnitude in its effect on, or any material adverse change in, any financial market which, in each case, in the reasonable judgment of such Purchaser, makes it impracticable or inadvisable to purchase the Securities at the Closing.

## ARTICLE III. REPRESENTATIONS AND WARRANTIES

3.1 Representations and Warranties of the Company. Except as set forth in the Disclosure Schedules, which Disclosure Schedules shall be deemed a part hereof and shall qualify any representation or otherwise made herein to the extent of the disclosure contained in the corresponding section of the Disclosure Schedules, the Company hereby makes the following representations and warranties to each Purchaser:

(a) Subsidiaries. All of the direct and indirect subsidiaries of the Company, if any, are set forth on Schedule 3.1(a). The Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all of the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities. If the Company has no subsidiaries, all other references to the Subsidiaries or any of them in the Transaction Documents shall be disregarded.

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(b) Organization and Qualification. The Company and each of the Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite corporate power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in: (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, prospects or condition (financial or otherwise) of the Company and the Subsidiaries, taken as a whole, or (iii) a material adverse effect on the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document (any of (i), (ii) or (iii), a "Material Adverse Effect") and no Proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

(c) Authorization; Enforcement. The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement and each of the other Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and each of the other Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and

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

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

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(e) Filings, Consents and Approvals. The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) the filings required pursuant to Section 4.4 of this Agreement, (ii) the filing with the Commission of the Prospectus, (iii) the notice(s) and application(s) to each applicable Trading Market for the listing of the Shares and Warrant Shares for trading thereon in the time and manner required thereby, [and] (iv) such filings as are required to be made under applicable state securities laws[, and (v) Stockholder Approval] (collectively, the "Required Approvals").

(f) Issuance of the Securities; Registration. The Securities are duly authorized and, when issued and paid for in accordance with the applicable Transaction Documents, will be duly and validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Warrant Shares, when issued in accordance with the terms of the Warrants, will be validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Company will have reserved from its duly authorized capital stock the maximum number of shares of Common Stock issuable pursuant to this Agreement and the Warrants. The Company has prepared and filed the Registration Statement in conformity in all material respects with the requirements of the Securities Act, which became effective on \_\_\_\_\_, 2024, including the Prospectus, and such amendments and supplements thereto as may have been required to the date of this Agreement. The Registration Statement is effective under the Securities Act and no stop order preventing or suspending the effectiveness of the Registration Statement or suspending or preventing the use of any Preliminary Prospectus or the Prospectus has been issued by the Commission and no proceedings for that purpose have been instituted or, to the knowledge of the Company, are threatened in writing by the Commission. The Company, if required by the rules and regulations of the Commission, shall file the Prospectus with the Commission pursuant to Rule 424(b). At the time the Registration Statement and any amendments thereto became effective, at the date of this Agreement and at the Closing Date, the Registration Statement and any amendments thereto conformed and will conform in all material respects to the requirements of the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein not misleading; and the Pricing Prospectus and Prospectus and any amendments or supplements thereto, at the time the Pricing Prospectus or the Prospectus, as applicable, or any amendment or supplement thereto was issued and at the Closing Date, conformed and will conform in all material respects to the requirements of the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Company was at the time of the filing of the Registration Statement eligible to use Form S-1 and is eligible to use Form S-1 on the date hereof and on the Closing Date.

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(g) Capitalization. The capitalization of the Company as of the date hereof is as set forth on Schedule 3.1(g), which Schedule 3.1(g) also includes the number of shares of Common Stock owned beneficially, and of record, by Affiliates of the Company as of the date hereof. Except as set forth on Schedule 3.1(g), the Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of employee stock options or the settlement of restricted stock units under the Company's equity incentive plans, the issuance of shares of Common Stock to employees pursuant to the Company's employee stock purchase plans and pursuant to the conversion and/or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as a result of the purchase and sale of the Securities and as set forth on Schedule 3.1(g), there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents or capital stock of any Subsidiary. The issuance and sale of the Securities will not obligate the Company or any Subsidiary to issue shares of Common Stock or other securities to any Person (other than the Purchasers). Except as set forth in the SEC Reports with respect to customary adjustments, such as reverse stock split, there are no outstanding securities or instruments of the Company or any Subsidiary with any provision that adjusts the exercise, conversion, exchange or reset price of such security or instrument upon an issuance of securities by the Company or any Subsidiary. Except as set forth on Schedule 3.1(g), there are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. For the two (2) years preceding the date hereof, all of the outstanding shares of capital stock of the Company are duly authorized, validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. There are no stockholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's stockholders.

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(h) SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the one (1) calendar year preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, together with the Pricing Prospectus and the Prospectus, being collectively referred to herein as the “SEC Reports”) on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, or to the extent corrected or modified by a subsequent amendment, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Company has never been an issuer subject to Rule 144(i) under the Securities Act. The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing (or to the extent corrected or modified by a subsequent amendment). Such financial statements have been prepared in all material respects in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved (“GAAP”), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments.

(i) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, except as set forth in Schedule 3.1(i), (i) there has been no event, occurrence or development that has had or that would reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any material liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company’s financial statements pursuant to GAAP or disclosed in filings made with the Commission, (iii) the Company has not materially altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock and (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company equity incentive plans. The Company does not have pending before the Commission any request for confidential treatment of information. Except for the issuance of the Securities contemplated by this Agreement or as set forth on Schedule 3.1(i), no event, liability, fact, circumstance, occurrence or development has occurred or exists with respect to the Company or its Subsidiaries or their respective businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least 1 Trading Day prior to the date that this representation is made.

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(j) Litigation. Except as set forth on Schedule 3.1(j), there is no action, suit, inquiry, notice of violation, proceeding or investigation pending or, to the knowledge of the Company, threatened in writing against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, governmental or administrative agency or regulatory authority (federal, state, county, local or foreign) (collectively, an “Action”). None of the Actions set forth on Schedule 3.1(j) (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the Securities or (ii) would, if there were an unfavorable decision [NTD: add to schedule 3.1(j) that CFIUS matter is an exception to clause (ii) of Section 3.1(j)] have or reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any Subsidiary, nor any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or officer of the Company, except for such matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act.

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

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

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

(n) Regulatory Permits. The Company and the Subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct their respective businesses as described in the SEC Reports, except where the failure to possess such permits would

not reasonably be expected to result in a Material Adverse Effect (“Material Permits”), and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any Material Permit.

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

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

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

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(r) Transactions With Affiliates and Employees. Except as set forth on Schedule 3.1(r), none of the officers or directors of the Company or any Subsidiary and, to the knowledge of the Company, none of the employees of the Company or any Subsidiary is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, providing for the borrowing of money from or lending of money to or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee, stockholder, member or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any equity incentive plan of the Company.

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

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(t) Certain Fees. Except as set forth in the Pricing Prospectus and the Prospectus, no brokerage or finder’s fees or commissions are or will be payable by the Company or any Subsidiary to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. The Purchasers shall have no obligation with respect to any fees or with respect to any claims made by or on behalf of other Persons for fees of a type contemplated in this Section that may be due in connection with the transactions contemplated by the Transaction Documents.

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

(v) Registration Rights. Except as set forth on Schedule 3.1(v), no Person has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary.

(w) Exchange Act Registration; Exchange Listing; and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to terminate, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the Commission is contemplating terminating such registration. Except as set forth on Schedule 3.1(w), the Company has not, in the 12 months preceding the date hereof, received notice from any Trading Market on which the Common Stock is or has been listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Trading Market. Except as set forth on Schedule 3.1(w), the Company is, and has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements. The Common Stock is currently eligible for electronic transfer through the Depository Trust Company or another established clearing corporation and the Company is current in payment of the fees to the Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

(x) Application of Takeover Protections. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's certificate of incorporation (or similar charter documents) or the laws of its state of incorporation that is or could become applicable to the Purchasers as a result of the Purchasers and the Company fulfilling their obligations or exercising their rights under the Transaction Documents, including without limitation as a result of the Company's issuance of the Securities and the Purchasers' ownership of the Securities.

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(y) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company confirms that neither it nor any other Person acting on its behalf has provided any of the Purchasers or their agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the Pricing Prospectus and the Prospectus. The Company understands and confirms that the Purchasers will rely on the foregoing representation in effecting transactions in securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Purchasers regarding the Company and its Subsidiaries, their respective businesses and the transactions contemplated hereby, including the Disclosure Schedules to this Agreement, is true and correct in all material respects as of the date made and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading. The Company acknowledges and agrees that no Purchaser makes or has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3.2 hereof.

(z) No Integrated Offering. Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.2, neither the Company, nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of any applicable shareholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated.

(aa) Solvency. Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, (i) the fair saleable value of the Company's assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year from the Closing Date. Schedule 3.1(aa) sets forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. For the purposes of this Agreement, "Indebtedness" means (x) any liabilities for borrowed money or amounts owed in excess of \$50,000 (other than trade accounts payable incurred in the ordinary course of business), (y) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company's consolidated balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (z) the present value of any lease payments in excess of \$50,000 due under leases required to be capitalized in accordance with GAAP. Neither the Company nor any Subsidiary is in default with respect to any Indebtedness.

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(bb) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, for the two (2) years preceding the date hereof, the Company and its Subsidiaries each (i) has made or filed all United States federal, state and local income and all foreign income and franchise tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim.

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

(dd) Accountants. The Company's independent registered public accounting firm is set forth in the Pricing Prospectus and the Prospectus. To the knowledge and belief of the Company, such accounting firm (i) is a registered public accounting firm as required by the Exchange Act and (ii) has expressed its opinion with respect to the financial statements to be included in the Company's Annual Report for the fiscal year ending December 31, 2023.

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(ee) Acknowledgment Regarding Purchasers' Purchase of Securities. The Company acknowledges and agrees that each of the Purchasers is acting solely in the capacity of an arm's length purchaser with respect to the Transaction Documents and the transactions contemplated thereby. The Company further acknowledges that no Purchaser is acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated thereby and any advice given by any Purchaser or any of their respective representatives or agents in connection with the Transaction Documents and the transactions contemplated thereby is merely incidental to the Purchasers' purchase of the Securities. The Company further represents to each Purchaser that the Company's decision to enter into this Agreement and the other Transaction Documents has been based solely on the independent evaluation of the transactions contemplated hereby by the Company and its representatives.

(ff) Acknowledgment Regarding Purchaser's Trading Activity. Anything in this Agreement or elsewhere herein to the contrary notwithstanding (except for Sections 3.2(f) and 4.14 hereof), it is understood and acknowledged by the Company that: (i) none of the Purchasers has been asked by the Company to agree, nor has any Purchaser agreed, to desist from purchasing or selling, long and/or short, securities of the Company, or "derivative" securities based on securities issued by the Company or to hold the Securities for any specified term; (ii) past or future open market or other transactions by any Purchaser, specifically including, without limitation, Short Sales or "derivative" transactions, before or after the closing of this or future private placement transactions, may negatively impact the market price of the Company's publicly-traded securities; (iii) any Purchaser, and counter-parties in "derivative" transactions to which any such Purchaser is a party, directly or indirectly, presently may have a "short" position in the Common Stock, and (iv) each Purchaser shall not be deemed to have any affiliation with or control over any arm's length counter-party in any "derivative" transaction. The Company further understands and acknowledges that (y) one or more Purchasers may engage in hedging activities at various times during the period that the Securities are outstanding, including, without limitation, during the periods that the value of the Warrant Shares deliverable with respect to Securities are being determined, and (z) such hedging activities (if any) could reduce the value of the existing stockholders' equity interests in the Company at and after the time that the hedging activities are being conducted. The Company acknowledges that such aforementioned hedging activities do not constitute a breach of any of the Transaction Documents.

(gg) Regulation M Compliance. The Company has not, and to its knowledge no one acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any of the Securities, (ii) sold, bid for, purchased, or paid any compensation for soliciting purchases of, any of the Securities, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any other securities of the Company, other than, in the case of clauses (ii) and (iii), compensation paid to the Placement Agent in connection with the placement of the Securities.

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

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

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

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

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

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

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

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

3.2 Representations and Warranties of the Purchasers. Each Purchaser, for itself and for no other Purchaser, hereby represents and warrants as of the date hereof and as of the Closing Date to the Company as follows (unless as of a specific date therein, in which case they shall be accurate as of such date):

(a) Organization; Authority. Such Purchaser is either an individual or an entity duly incorporated or formed, validly existing and in good standing under the laws of the jurisdiction of its incorporation or formation with full right, corporate, partnership, limited liability company or similar power and authority to enter into and to consummate the transactions contemplated by the Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of the Transaction Documents and performance by such Purchaser of the transactions contemplated by the Transaction Documents have been duly authorized by all necessary corporate, partnership, limited liability company or similar action, as applicable, on the part of such Purchaser. Each Transaction Document to which it is a party has been duly executed by such Purchaser, and when delivered by such Purchaser in accordance with the terms hereof, will constitute the valid and legally binding obligation of such Purchaser, enforceable against it in accordance with its terms, except: (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(b) Understandings or Arrangements. Such Purchaser is acquiring the Securities as principal for its own account and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities (this representation and warranty not limiting such Purchaser's right to sell the Securities pursuant to the Registration Statement or otherwise in compliance with applicable federal and state securities laws). Such Purchaser is acquiring the Securities hereunder in the ordinary course of its business.

(c) Purchaser Status. At the time such Purchaser was offered the Securities, it was, and as of the date hereof it is, and on each date on which it exercises any Warrants, it will be an "accredited investor" as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7), (a)(8), (a)(9), (a)(12), or (a)(13) under the Securities Act.

(d) Experience of Such Purchaser. Such Purchaser, either alone or together with its representatives, has such knowledge, sophistication and experience in business and financial matters so as to be capable of evaluating the merits and risks of the prospective investment in the Securities, and has so evaluated the merits and risks of such investment. Such Purchaser is able to bear the economic risk of an investment in the Securities and, at the present time, is able to afford a complete loss of such investment.

(e) Access to Information. Such Purchaser acknowledges that it has had the opportunity to review the Transaction Documents (including all exhibits and schedules thereto) and the SEC Reports and has been afforded, (i) the opportunity to ask such questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the offering of the Securities and the merits and risks of investing in the Securities; (ii) access to information about the Company and its financial condition, results of operations, business, properties, management and prospects sufficient to enable it to evaluate its investment; and (iii) the opportunity to obtain such additional information that the Company possesses or can acquire without unreasonable effort or expense that is necessary to make an informed investment decision with respect to the investment. Such Purchaser acknowledges and agrees that neither the Placement Agent nor any Affiliate of the Placement Agent has provided such Purchaser with any information or advice with respect to the Securities nor is such information or advice necessary or desired. Neither the Placement Agent nor any Affiliate has made or makes any representation as to the Company or the quality of the Securities and the Placement Agent and any Affiliate may have acquired non-public information with respect to the Company which such Purchaser agrees need not be provided to it. In connection with the issuance of the Securities to such Purchaser, neither the Placement Agent nor any of its Affiliates has acted as a financial advisor or fiduciary to such Purchaser.

(f) Certain Transactions and Confidentiality. Other than consummating the transactions contemplated hereunder, such Purchaser has not, nor has any Person acting on behalf of or pursuant to any understanding with such Purchaser, directly or indirectly executed any purchases or sales, including Short Sales, of the securities of the Company during the period commencing as of the time that such Purchaser first received a term sheet (written or oral) from the Company, the Placement Agent or any

other Person representing the Company setting forth the material pricing terms of the transactions contemplated hereunder and ending immediately prior to the execution hereof. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the representation set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement. Other than to other Persons party to this Agreement or to such Purchaser's representatives, including, without limitation, its officers, directors, partners, legal and other advisors, employees, agents and Affiliates, such Purchaser has maintained the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction). Notwithstanding the foregoing, for the avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to locating or borrowing shares in order to effect Short Sales or similar transactions in the future.

The Company acknowledges and agrees that the representations contained in this Section 3.2 shall not modify, amend or affect such Purchaser's right to rely on the Company's representations and warranties contained in this Agreement or any representations and warranties contained in any other Transaction Document or any other document or instrument executed and/or delivered in connection with this Agreement or the consummation of the transactions contemplated hereby. Notwithstanding the foregoing, for the avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to locating or borrowing shares in order to effect Short Sales or similar transactions in the future.

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

4.1 Warrant Shares. The Shares and Warrants shall be issued free of restrictive legends under the Securities Act. If all or any portion of a Warrant is exercised at a time when there is an effective registration statement to cover the issuance or resale of the Warrant Shares or if the Warrant is exercised via cashless exercise, the Warrant Shares issued pursuant to any such exercise shall be issued free of all legends. If at any time following the date hereof the Registration Statement (or any subsequent registration statement registering the sale or resale of the Warrant Shares) is not effective or is not otherwise available for the sale or resale of the Warrant Shares, the Company shall immediately notify the holders of the Warrants in writing that such registration statement is not then effective and thereafter shall promptly notify such holders when the registration statement is effective again and available for the sale or resale of the Warrant Shares (it being understood and agreed that the foregoing shall not limit the ability of the Company to issue, or any Purchaser to sell, any of the Warrant Shares in compliance with applicable federal and state securities laws). The Company shall use commercially reasonable efforts to keep a registration statement (including the Registration Statement) registering the issuance or resale of the Warrant Shares effective during the term of the Warrants.

4.2 Furnishing of Information. Until the earliest of the time that (i) no Purchaser owns Securities or (ii) the Common Warrants have expired or have been exercised in full, the Company covenants to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the Exchange Act even if the Company is not then subject to the reporting requirements of the Exchange Act.

4.3 Integration. The Company shall not sell, offer for sale or solicit offers to buy or otherwise negotiate in respect of any security (as defined in Section 2 of the Securities Act) that would be integrated with the offer or sale of the Securities for purposes of the rules and regulations of any Trading Market such that it would require shareholder approval prior to the closing of such other transaction unless shareholder approval is obtained before the closing of such subsequent transaction.

4.4 Securities Laws Disclosure: Publicity. The Company shall (a) by the Disclosure Time, issue a press release disclosing the material terms of the transactions contemplated hereby, and (b) file a Current Report on Form 8-K, including the Transaction Documents as exhibits thereto, with the Commission within the time required by the Exchange Act, provided that the Company shall not be required to file such a Current Report on Form 8-K if the Transaction Documents have been previously filed with the Commission as exhibits to a pre-effective or post-effective amendment to the Registration Statement. From and after the issuance of such press release, the Company represents to the Purchasers that it shall have publicly disclosed all material, non-public information delivered to any of the Purchasers by the Company or any of its Subsidiaries, or any of their respective officers, directors, employees, Affiliates or agents, including, without limitation, the Placement Agent, in connection with the transactions contemplated by the Transaction Documents. In addition, effective upon the issuance of such press release, the Company acknowledges and agrees that any and all confidentiality or similar obligations under any agreement, whether written or oral, between the Company, any of its Subsidiaries or any of their respective officers, directors, agents, employees, Affiliates or agents, including, without limitation, the Placement Agent, on the one hand, and any of the Purchasers or any of their Affiliates on the other hand, shall terminate and be of no further force or effect. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company. The Company and each Purchaser shall consult with each other in issuing any other press releases with respect to the transactions contemplated hereby, and neither the Company nor any Purchaser shall issue any such press release nor otherwise make any such public statement without the prior consent of the Company, with respect to any press release of any Purchaser, or without the prior consent of each Purchaser, with respect to any press release of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law, in which case the disclosing party shall promptly provide the other party with prior notice of such public statement or communication. Notwithstanding the foregoing, the Company shall not publicly disclose the name of any Purchaser, or include the name of any Purchaser in any filing with the Commission or any regulatory agency or Trading Market, without the prior written consent of such Purchaser, except (a) as required by federal securities law in connection with the filing of final Transaction Documents with the Commission and (b) to the extent such disclosure is required by law or Trading Market regulations, in which case the Company shall provide the Purchasers with prior notice of such disclosure permitted under this clause (b) and reasonably cooperate with such Purchaser regarding such disclosure.

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

4.6 Non-Public Information. Except with respect to the material pricing terms of the transactions contemplated by the Transaction Documents, which shall be disclosed pursuant to Section 4.4, the Company covenants and agrees that neither it, nor any other Person acting on its behalf will provide any Purchaser or its agents or counsel with any information that constitutes, or the Company reasonably believes constitutes, material non-public information, unless prior thereto such Purchaser shall have consented in writing to the receipt of such information and agreed in writing with the Company to keep such information confidential. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company. To the extent that the Company, any of its Subsidiaries, or any of their respective officers, directors, agents, employees or Affiliates delivers any material, non-public information to a Purchaser without such Purchaser's consent, the Company hereby covenants and agrees that such Purchaser shall not have any duty of confidentiality to the Company, any of its Subsidiaries, or any of their respective officers, directors, employees, Affiliates or agents, including, without limitation, the Placement Agent, or a duty to the Company, any of its Subsidiaries or any of their respective officers, directors, employees, Affiliates or agents, including, without limitation, the Placement Agent, not to trade on the basis of, such material, non-public information, provided that the Purchaser shall remain subject to applicable law. To the extent that any notice provided pursuant to any Transaction Document constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously with the delivery of such notice file such notice with the Commission pursuant to a



4.7 Use of Proceeds. Except as set forth in the Pricing Prospectus and the Prospectus, the Company shall use the net proceeds from the sale of the Securities hereunder for working capital purposes and shall not use such proceeds: (a) for the satisfaction of any portion of the Company's debt (other than payment of trade payables in the ordinary course of the Company's business and prior practices), (b) for the redemption of any Common Stock or Common Stock Equivalents, (c) for the settlement of any outstanding litigation or (d) in violation of FCPA or OFAC regulations.

4.8 Indemnification of Purchasers. Subject to the provisions of this Section 4.8, the Company will indemnify and hold each Purchaser and its directors, officers, shareholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls such Purchaser (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, shareholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling persons (each, a "Purchaser Party") harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, costs and expenses, including all judgments, amounts paid in settlements, court costs and reasonable attorneys' fees and costs of investigation that any such Purchaser Party may suffer or incur as a result of or relating to (a) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents or (b) any action instituted against the Purchaser Parties in any capacity, or any of them or their respective Affiliates, by any stockholder of the Company who is not an Affiliate of such Purchaser Party, with respect to any of the transactions contemplated by the Transaction Documents (unless such action is solely based upon a material breach of such Purchaser Party's representations, warranties or covenants under the Transaction Documents or any agreements or understandings such Purchaser Party may have with any such stockholder or any violations by such Purchaser Party of state or federal securities laws or any conduct by such Purchaser Party which is finally judicially determined to constitute fraud, gross negligence or willful misconduct). If any action shall be brought against any Purchaser Party in respect of which indemnity may be sought pursuant to this Agreement, such Purchaser Party shall promptly notify the Company in writing, and, the Company shall have the right to assume the defense thereof with counsel of its own choosing reasonably acceptable to the Purchaser Party. Any Purchaser Party shall have the right to employ separate counsel in any such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Purchaser Party except to the extent that (i) the employment thereof has been specifically authorized by the Company in writing, (ii) the Company has failed after a reasonable period of time to assume such defense and to employ counsel or (iii) in such action there is, in the reasonable opinion of counsel a material conflict on any material issue between the position of the Company and the position of such Purchaser Party, in which case the Company shall be responsible for the reasonable fees and expenses of no more than one such separate counsel. The Company will not be liable to any Purchaser Party under this Agreement (y) for any settlement by a Purchaser Party effected without the Company's prior written consent, which shall not be unreasonably withheld or delayed; or (z) to the extent, but only to the extent that a loss, claim, damage or liability is attributable to any Purchaser Party's breach of any of the representations, warranties, covenants or agreements made by such Purchaser Party in this Agreement. The indemnification required by this Section 4.8 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or are incurred. The indemnity agreements contained herein shall be in addition to any cause of action or similar right of any Purchaser Party against the Company or others and any liabilities the Company may be subject to pursuant to law.

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

4.10 Listing of Common Stock. The Company hereby agrees to use commercially reasonable efforts to maintain the listing or quotation of the Common Stock on the Trading Market on which it is currently listed, and concurrently with the Closing, the Company shall apply to list or quote all of the Shares and Warrant Shares on such Trading Market and promptly secure the listing of all of the Shares and Warrant Shares on such Trading Market. The Company further agrees, if the Company applies to have the Common Stock traded on any other Trading Market, it will then include in such application all of the Shares and Warrant Shares, and will take such other action as is necessary to cause all of the Shares and Warrant Shares to be listed or quoted on such other Trading Market as promptly as possible. The Company will then take all action reasonably necessary to continue the listing and trading of its Common Stock on a Trading Market and will comply in all respects with the Company's reporting, filing and other obligations under the bylaws or rules of the Trading Market. The Company agrees to use commercially reasonable efforts to maintain the eligibility of the Common Stock for electronic transfer through the Depository Trust Company or another established clearing corporation, including, without limitation, by timely payment of fees to the Depository Trust Company or such other established clearing corporation in connection with such electronic transfer. In addition, the Company shall hold an annual or special meeting of stockholders on or prior to the date that is ninety (90) days following the Closing Date for the purpose of obtaining Stockholder Approval, with the recommendation of the Company's Board of Directors that such proposals are approved, and the company shall solicit proxies from its stockholders in connection therewith in the same manner as all other management proposals in such proxy statement and all management appointed proxyholders shall vote their proxies in favor of such proposals. If the company does not obtain Stockholder Approval at the first meeting, the Company shall call a meeting every ninety (90) days thereafter to seek Stockholder Approval until the earlier of the date on which Stockholder Approval is obtained or the Common Warrants are no longer outstanding.

4.11 [RESERVED]

4.12 Subsequent Equity Sales.

(a) From the date hereof until thirty (30) days after the Closing Date, neither the Company nor any Subsidiary shall (i) issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents or (ii) file any registration statement or amendment or supplement thereto, other than (A) the Prospectus, (B) the filing of a registration statement on Form S-8 in connection with any employee benefit plan, (C) the filing of any Annual Report on Form 10-K, Quarterly Report on Form 10-Q or Current Report on Form 8-K that may be deemed to be an amendment or supplement to any existing registration statement, and (D) the filing of any amendment or supplement to any existing registration statement solely for the purpose of revising any required disclosure in such registration statement and not for the purpose of increasing the offering size pursuant to any such registration statement.

(b) From the date hereof until the one (1) year anniversary of the Closing Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction. "Variable Rate Transaction" means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity

securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock; or (ii) enters into, or effects a transaction under, any agreement, including, but not limited to, an equity line of credit or an “at-the-market offering,” whereby the Company may issue securities at a future determined price regardless of whether shares pursuant to such agreement have actually been issued and regardless of whether such agreement is subsequently canceled; provided, however, that, after thirty (30) days following the Closing Date, the entry into and/or issuance of shares of Common Stock in an “at the market” offering with the Placement Agent as sales agent shall not be deemed a Variable Rate Transaction. Any Purchaser shall be entitled to obtain injunctive relief against the Company to preclude any such prohibited issuance, which remedy shall be in addition to any legal right to collect damages.

(c) Notwithstanding the foregoing, this Section 4.12 shall not apply in respect of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance.

4.13 Equal Treatment of Purchasers. No consideration (including any modification of this Agreement) shall be offered or paid to any Person to amend or consent to a waiver or modification of any provision of this Agreement unless the same consideration is also offered to all of the parties to this Agreement. For clarification purposes, this provision constitutes a separate right granted to each Purchaser by the Company and negotiated separately by each Purchaser, and is intended for the Company to treat the Purchasers as a class and shall not in any way be construed as the Purchasers acting in concert or as a group with respect to the purchase, disposition or voting of Securities or otherwise.

4.14 Certain Transactions and Confidentiality. Each Purchaser, severally and not jointly with the other Purchasers, covenants that neither it nor any Affiliate acting on its behalf or pursuant to any understanding with it will execute any purchases or sales, including Short Sales of any of the Company’s securities during the period commencing with the execution of this Agreement and ending at such time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company pursuant to the initial press release as described in Section 4.4, such Purchaser will maintain the confidentiality of the existence and terms of this transaction and the information included in the Disclosure Schedules (other than as disclosed to its legal and other representatives). Notwithstanding the foregoing and notwithstanding anything contained in this Agreement to the contrary, the Company expressly acknowledges and agrees that (i) no Purchaser makes any representation, warranty or covenant hereby that it will not engage in effecting transactions in any securities of the Company after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4, (ii) no Purchaser shall be restricted or prohibited from effecting any transactions in any securities of the Company in accordance with applicable securities laws from and after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4 and (iii) no Purchaser shall have any duty of confidentiality or duty not to trade in the securities of the Company to the Company, any of its Subsidiaries, or any of their respective officers, directors, employees, Affiliates, or agent, including, without limitation, the Placement Agent, after the issuance of the initial press release as described in Section 4.4. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser’s assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser’s assets, the covenant set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement.

4.15 Capital Changes. Until the one year anniversary of the Closing Date, the Company shall not undertake a reverse or forward stock split or reclassification of the Common Stock without the prior written consent of the Purchasers holding a majority in interest of the Shares and Prefunded Warrants other than a reverse stock split that is required, in the good faith determination of the Board of Directors, to maintain the listing of the Common Stock on the Trading Market.

4.16 Exercise Procedures. The forms of Notice of Exercise included in the Warrants set forth the totality of the procedures required of the Purchasers in order to exercise the Warrants. No additional legal opinion, other information or instructions shall be required of the Purchasers to exercise their Warrants. Without limiting the preceding sentences, 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 form be required in order to exercise the Warrants. The Company shall honor exercises of the Warrants and shall deliver Warrant Shares in accordance with the terms, conditions and time periods set forth in the Transaction Documents.

4.17 Lock-Up Agreements. The Company shall not amend, modify, waive or terminate any provision of any of the Lock-Up Agreements except to extend the term of the lock-up period and shall enforce the provisions of each Lock-Up Agreement in accordance with its terms. If any party to a Lock-Up Agreement breaches any provision of a Lock-Up Agreement, the Company shall promptly use its commercially reasonable efforts to seek specific performance of the terms of such Lock-Up Agreement.

**ARTICLE V.  
MISCELLANEOUS**

5.1 Termination. This Agreement may be terminated by any Purchaser, as to such Purchaser’s obligations hereunder only and without any effect whatsoever on the obligations between the Company and the other Purchasers, by written notice to the other parties, if the Closing has not been consummated on or before the fifth (5<sup>th</sup>) Trading Day following the date hereof; provided, however, that no such termination will affect the right of any party to sue for any breach by any other party (or parties).

5.2 Fees and Expenses. Except as expressly set forth in the Transaction Documents to the contrary, each party shall pay the fees and expenses of its advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party incident to the negotiation, preparation, execution, delivery and performance of this Agreement. The Company shall pay all Transfer Agent fees (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company and any exercise notice delivered by a Purchaser), stamp taxes and other taxes and duties levied in connection with the delivery of any Securities to the Purchasers.

5.3 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, the Pricing Prospectus and the Prospectus, contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules.

5.4 Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of: (a) the time of transmission, if such notice or communication is delivered via email attachment at the email address as set forth on the signature pages attached hereto at or prior to 5:30 p.m. (New York City time) on a Trading Day, (b) the next Trading Day after the time of transmission, if such notice or

communication is delivered via email attachment at the email address as set forth on the signature pages attached hereto on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (c) the second (2<sup>nd</sup>) Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as set forth on the signature pages attached hereto.

5.5 Amendments; Waivers. No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and Purchasers which purchased at least 50.1% in interest of the Shares and Prefunded Warrants based on the initial Subscription Amounts hereunder (or, prior to the Closing, the Company and each Purchaser) or, in the case of a waiver, by the party against whom enforcement of any such waived provision is sought, provided that if any amendment, modification or waiver disproportionately and adversely impacts a Purchaser (or group of Purchasers), the consent of at least 50.1% in interest of such disproportionately impacted Purchaser (or group of Purchasers) shall also be required. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right. Any proposed amendment or waiver that disproportionately, materially and adversely affects the rights and obligations of any Purchaser relative to the comparable rights and obligations of the other Purchasers shall require the prior written consent of such adversely affected Purchaser. Any amendment effected in accordance with this Section 5.5 shall be binding upon each Purchaser and holder of Securities and the Company.

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

5.7 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns. The Company may not assign this Agreement or any rights or obligations hereunder without the prior written consent of each Purchaser (other than by merger). Any Purchaser may assign any or all of its rights under this Agreement to any Person to whom such Purchaser assigns or transfers any Securities, provided that such transferee agrees in writing to be bound, with respect to the transferred Securities, by the provisions of the Transaction Documents that apply to the "Purchasers."

5.8 No Third-Party Beneficiaries. The Placement Agent shall be the third party beneficiary of the representations, warranties, and covenants of the Company in this Agreement and the representations, warranties, and covenants of the Purchasers in this Agreement. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person, except as otherwise set forth in Section 4.8 and this Section 5.8.

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5.9 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Action or Proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such Action or Proceeding is improper or is an inconvenient venue for such Proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such Action or Proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If any party shall commence an Action or Proceeding to enforce any provisions of the Transaction Documents, then, in addition to the obligations of the Company under Section 4.8, the prevailing party in such Action or Proceeding shall be reimbursed by the non-prevailing party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such Action or Proceeding.

5.10 Survival. The representations and warranties contained herein shall survive the Closing and the delivery of the Securities.

5.11 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to each other party, it being understood that the parties need not sign the same counterpart. In the event that any signature is delivered by e-mail delivery (including any electronic signature covered by the U.S. federal E-SIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., www.docusign.com) or other transmission method, such signature shall be deemed to have been duly and validly delivered and shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such ".pdf" signature page were an original thereof.

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

5.13 Rescission and Withdrawal Right. Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) any of the other Transaction Documents, whenever any Purchaser exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Purchaser may rescind or withdraw, in its sole discretion from time to time upon written notice to the Company, any relevant notice, demand or election in whole or in part without prejudice to its future actions and rights; provided, however, that, in the case of a rescission of an exercise of a Warrant, the applicable Purchaser shall be required to return any shares of Common Stock subject to any such rescinded exercise notice concurrently with the return to such Purchaser of the aggregate exercise price paid to the Company for such shares and the restoration of such Purchaser's right to acquire such shares pursuant to such Purchaser's Warrant (including, issuance of a replacement warrant certificate evidencing such restored right).

5.14 Replacement of Securities. If any certificate or instrument evidencing any Securities is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof (in the case of mutilation), or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction. The applicant for a new certificate or instrument under such circumstances shall also pay any reasonable third-party costs (including customary indemnity) associated with the issuance of such replacement Securities.

5.15 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Purchasers and the

Company will be entitled to specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations contained in the Transaction Documents and hereby agree to waive and not to assert in any Action for specific performance of any such obligation the defense that a remedy at law would be adequate.

5.16 Payment Set Aside. To the extent that the Company makes a payment or payments to any Purchaser pursuant to any Transaction Document or a Purchaser enforces or exercises its rights thereunder, and such payment or payments or the proceeds of such enforcement or exercise or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside, recovered from, disgorged by or are required to be refunded, repaid or otherwise restored to the Company, a trustee, receiver or any other Person under any law (including, without limitation, any bankruptcy law, state or federal law, common law or equitable cause of action), then to the extent of any such restoration the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such enforcement or setoff had not occurred.

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5.17 Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under any Transaction Document are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance or non-performance of the obligations of any other Purchaser under any Transaction Document. Nothing contained herein or in any other Transaction Document, and no action taken by any Purchaser pursuant hereto or thereto, shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Purchaser shall be entitled to independently protect and enforce its rights including, without limitation, the rights arising out of this Agreement or out of the other Transaction Documents, and it shall not be necessary for any other Purchaser to be joined as an additional party in any Proceeding for such purpose. Each Purchaser has been represented by its own separate legal counsel in its review and negotiation of the Transaction Documents. For reasons of administrative convenience only, each Purchaser and its respective counsel have chosen to communicate with the Company through EGS. EGS does not represent any of the Purchasers and only represents the Placement Agent. The Company has elected to provide all Purchasers with the same terms and Transaction Documents for the convenience of the Company and not because it was required or requested to do so by any of the Purchasers. It is expressly understood and agreed that each provision contained in this Agreement and in each other Transaction Document is between the Company and a Purchaser, solely, and not between the Company and the Purchasers collectively and not between and among the Purchasers.

5.18 Liquidated Damages. The Company's obligations to pay any partial liquidated damages or other amounts owing under the Transaction Documents is a continuing obligation of the Company and shall not terminate until all unpaid partial liquidated damages and other amounts have been paid notwithstanding the fact that the instrument or security pursuant to which such partial liquidated damages or other amounts are due and payable shall have been canceled.

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

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

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**5.21 WAIVER OF JURY TRIAL. IN ANY ACTION, SUIT, OR PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY RELATED TO THE TRANSACTION DOCUMENTS, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY, IRREVOCABLY AND EXPRESSLY WAIVES FOREVER TRIAL BY JURY.**

*(Signature Pages Follow)*

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IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

**MUSTANG BIO, INC.**

Address for Notice:

By: \_\_\_\_\_

E-Mail:

Name:

Title:

With a copy to (which shall not constitute notice):

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK  
SIGNATURE PAGE FOR PURCHASER FOLLOWS]

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[PURCHASER SIGNATURE PAGES TO MBIO SECURITIES PURCHASE AGREEMENT]

IN WITNESS WHEREOF, the undersigned have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

Name of Purchaser: \_\_\_\_\_

Signature of Authorized Signatory of Purchaser: \_\_\_\_\_

Name of Authorized Signatory: \_\_\_\_\_

Title of Authorized Signatory: \_\_\_\_\_

Email Address of Authorized Signatory: \_\_\_\_\_

Address for Notice to Purchaser:

Address for Delivery of Warrants to Purchaser (if not same as address for notice):

Subscription Amount: \$ \_\_\_\_\_

Shares: \_\_\_\_\_

Prefunded Warrant Shares: \_\_\_\_\_ Beneficial Ownership Blocker  4.99% or  9.99%

Series A-1 Warrant Shares: \_\_\_\_\_ Beneficial Ownership Blocker  4.99% or  9.99%

Series A-2 Warrant Shares: \_\_\_\_\_ Beneficial Ownership Blocker  4.99% or  9.99%

Series A-3 Warrant Shares: \_\_\_\_\_ Beneficial Ownership Blocker  4.99% or  9.99%

EIN Number: \_\_\_\_\_

Notwithstanding anything contained in this Agreement to the contrary, by checking this box (i)the obligations of the above-signed to purchase the securities set forth in this Agreement to be purchased from the Company by the above-signed, and the obligations of the Company to sell such securities to the above-signed, shall be unconditional and all conditions to Closing shall be disregarded, (ii)the Closing shall occur on the second (2<sup>nd</sup>) Trading Day following the date of this Agreement and (iii)any condition to Closing contemplated by this Agreement (but prior to being disregarded by clause (i)above) that required delivery by the Company or the above-signed of any agreement, instrument, certificate or the like or purchase price (as applicable) shall no longer be a condition and shall instead be an unconditional obligation of the Company or the above-signed (as applicable) to deliver such agreement, instrument, certificate or the like or purchase price (as applicable) to such other party on the Closing Date.

[SIGNATURE PAGES CONTINUE]



KPMG LLP  
Two Financial Center  
60 South Street  
Boston, MA 02111

**Consent of Independent Registered Public Accounting Firm**

We consent to the use of our report dated March 11, 2024, with respect to the financial statements of Mustang Bio, Inc., incorporated herein by reference, and to the reference to our firm under the heading "Experts" in the prospectus.

*KPMG LLP*

Boston, Massachusetts  
April 29, 2024

**KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.**

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## Calculation of Filing Fee Tables

Form S-1  
(Form Type)

Mustang Bio, Inc.

(Exact Name of Each Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price <sup>(1)</sup>	Fee Rate	Amount of Registration Fee
Equity	Common Stock, par value \$0.0001 per share ("Common Stock") <sup>(2)</sup>	457(o)			\$ 5,000,000	0.00014760	\$ 738.00
Other	Pre-funded Warrants to purchase Common Stock <sup>(3)</sup>	Other			-		(3)
Equity	Common Stock underlying Pre-Funded Warrants <sup>(3)</sup>	457(o)			-		(3)
Other	Series A-1 Warrants to purchase Common Stock	Other			-		(4)
Equity	Common Stock underlying the Series A-1 Warrants to purchase Common Stock	457(o)			\$ 5,000,000	0.00014760	\$ 738.00
Other	Series A-2 Warrants to purchase Common Stock	Other			-		(4)
Equity	Common Stock underlying the Series A-2 Warrants to purchase Common Stock	457(o)			\$ 5,000,000	0.00014760	\$ 738.00
Other	Series A-3 Warrants to purchase Common Stock	Other			-		(4)
Equity	Common Stock underlying the Series A-3 Warrants to purchase Common Stock	457(o)			\$ 5,000,000	0.00014760	\$ 738.00
Other	Placement Agent Warrants to purchase Common Stock	Other			-		(4)(5)
Equity	Common Stock underlying the Placement Agent Warrants to purchase Common Stock	457(o)			\$ 375,000	0.00014760	\$ 55.35
<b>Total Offering Amounts</b>					\$ 20,375,000	0.00014760	\$ 3,007.35
<b>Total Fees Previously Paid</b>							1,549.80
<b>Total Fee Offsets</b>							-
<b>Net Fee Due</b>							\$ 1,457.55

(1) Estimated solely for the purpose of calculating the amount of the registration fee in pursuant to Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act").

(2) Pursuant to Rule 416 under the Securities Act, this registration statement shall also cover any additional shares of the registrant's securities that become issuable by reason of any share splits, share dividends or similar transactions.

(3) 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 \$5,000,000.

(4) No separate registration fee is payable pursuant to Rule 457(g) under the Securities Act.

(5) Represents warrants issuable to the placement agent, or its designees, to purchase a number of shares of Common Stock equal to 6.0% of the aggregate number of shares of Common Stock and pre-funded warrants being offered in this offering, at an exercise price equal to 125% of the combined public offering price per share of Common Stock and accompanying Warrants.