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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934

Filed by Registrant ☒

Filed by a Party other than the Registrant ☐

Check the appropriate box:

☐ Preliminary Proxy Statement

☐ **Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**

☒ Definitive Proxy Statement

☐ Definitive Additional Materials

☐ Soliciting Material Under Rule 14a-12

MUSTANG BIO, INC.

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

☒ No fee required

☐ Fee paid previously with preliminary materials

☐ Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a6(i)(1) and 0-11

MUSTANG BIO, INC.
95 Sawyer Road, Suite 110
Waltham, Massachusetts 02453

Dear Stockholder:

You are cordially invited to the Annual Meeting of Stockholders (the "Annual Meeting") of Mustang Bio, Inc. ("Mustang" or the "Company"), to be held virtually at 9:00 a.m. Eastern Time, on Monday, December 22, 2025. The Annual Meeting can be accessed by visiting www.virtualshareholdermeeting.com/MBIO2025, where you will be able to listen to the meeting live, submit questions and vote online. At the Annual Meeting, the stockholders will be asked to (i) elect seven directors for a term of one year, (ii) ratify the appointment of KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025, (iii) approve an amendment to the Company's 2019 Employee Stock Purchase Plan to increase the number of shares issuable by 250,000 shares and increase the number of shares subject to a Purchase Right thereunder to 10,000, (iv) approve an amendment to the Company's 2016 Incentive Plan to increase the number of shares issuable by 2,500,000 shares and (v) transact any other business that may properly come before the Annual Meeting or any adjournment of the Annual Meeting. You will also have the opportunity to ask questions at the meeting.

Your vote is important. It is important that your stock be represented at the meeting regardless of the number of shares you hold. To be sure your vote counts and assure a quorum, please vote by mobile device or over the Internet, or if you received proxy materials by mail, vote, sign, date and return the proxy card accompanying the printed proxy materials, as soon as possible, regardless of whether you plan to virtually attend the meeting; or if you hold your shares through a bank, brokerage firm or other nominee, please follow the instructions for voting provided by your bank, brokerage firm or other nominee, regardless of whether you plan to attend the meeting virtually. If you virtually attend the Annual Meeting and wish to vote virtually, you may revoke your proxy at the meeting.

If you have any questions about the proxy statement or the accompanying 2024 Annual Report, please contact us at info@mustangbio.com.

We look forward to seeing you at the Annual Meeting.

Sincerely,

/s/ Manuel Litchman, M.D.
Manuel Litchman, M.D.
President, Chief Executive Officer and
Interim Chief Financial Officer

December 3, 2025
Waltham, Massachusetts

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MUSTANG BIO, INC.
95 Sawyer Road, Suite 110
Waltham, Massachusetts 02453

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

The Annual Meeting of Stockholders of Mustang Bio, Inc. will be held virtually on December 22, 2025, at 9:00 a.m., Eastern Time. At the Annual Meeting, stockholders will consider and act on the following items:

1. The election of seven directors for a term of one year;

2. The ratification of the appointment of KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025;

3. Approve an amendment to the Company's 2019 Employee Stock Purchase Plan to increase the number of shares issuable by 250,000 shares and increase the number of shares subject to a Purchase Right thereunder to 10,000;

4. Approve an amendment to the Company's 2016 Incentive Plan to increase the number of shares issuable by Mustang Bio, Inc. by 2,500,000 shares; and

5. The transaction of any other business that may properly come before the Annual Meeting or any adjournment of the Annual Meeting.

Only those stockholders of record as of the close of business on November 18, 2025, are entitled to vote at the Annual Meeting or any postponements or adjournments thereof. A complete list of stockholders entitled to vote at the Annual Meeting will be available for your inspection 10 days preceding our Annual Meeting, at our offices located at 95 Sawyer Road, Suite 110, Waltham, Massachusetts 02453, between the hours of 10:00 a.m. and 5:00 p.m., ET, each business day, or if we determine that a physical in-person inspection is not practicable, such list of stockholders may be made available electronically, upon request. You or your proxyholder may participate and vote by visiting www.virtualshareholdermeeting.com/MBIO2025 and using your 16-digit control number.

Please note the technical requirements for virtual attendance at the Annual Meeting, as described in the enclosed Proxy Statement under the heading "Questions and Answers."

On January 15, 2025, we filed an amendment (the "Reverse Split Amendment") to our Amended and Restated Certificate of Incorporation (our "Certificate of Incorporation") with the Secretary of State of the State of Delaware to effect a 1-for-50 reverse stock split of our common stock (the "Reverse Stock Split"). As a result of the Reverse Stock Split, every 50 shares of common stock outstanding immediately prior to effectiveness of the Reverse Stock Split were combined and converted into one share of common stock without any change in the par value per share. The Reverse Stock Split became effective on January 15, 2025. No fractional shares were issued in connection with the Reverse Stock Split. Stockholders who would have otherwise been entitled to a fraction of one share of common stock as a result of the Reverse Stock Split instead received a proportional cash payment. All share and per share information in this proxy statement has been retroactively adjusted to give effect to the Reverse Stock Split, unless otherwise indicated.

IMPORTANT NOTICE REGARDING AVAILABILITY OF PROXY MATERIALS. THIS PROXY STATEMENT AND THE ENCLOSED PROXY CARD ARE BEING MAILED TO OUR STOCKHOLDERS ON OR ABOUT DECEMBER 3, 2025. In accordance with the rules of the Securities and Exchange Commission (the "SEC"), we are advising our stockholders of the availability on the internet of our proxy materials related to our forthcoming Annual Meeting. Because we have elected to utilize the "full set delivery" option, we are delivering to all stockholders paper copies of all of the proxy materials, as well as providing access to those proxy materials on a publicly accessible website. This Notice of Annual Meeting and Proxy Statement are available to holders of our common stock at *www.proxyvote.com* and on our corporate website *www.mustangbio.com*.

YOUR VOTE IS IMPORTANT!

Submitting your proxy does not affect your right to vote virtually if you decide to virtually attend the Annual Meeting. You are urged to submit your proxy as soon as possible, regardless of whether or not you expect to virtually attend the Annual Meeting. You may revoke your proxy at any time before it is voted at the Annual Meeting by (i) delivering written notice to our Corporate Secretary at our address above, (ii) submitting a later dated proxy card, (iii) voting again via the internet or (iv) attending the Annual Meeting and voting virtually. No revocation under (i) or (ii) will be effective unless written notice or the proxy card is received by our Corporate Secretary at or before the Annual Meeting.

When you submit your proxy, you authorize Manuel Litchman, M.D. and/or Peter Carney or their designees to vote your shares at the Annual Meeting and on any adjournments of the Annual Meeting in accordance with your instructions.

By Order of the Board of Directors,

/s/ Manuel Litchman, M.D.
Manuel Litchman, M.D.
President, Chief Executive Officer and Interim Chief Financial Officer

December 3, 2025
Waltham, Massachusetts

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QUESTIONS AND ANSWERS

Q: *When is the Annual Meeting?*

A. The Annual Meeting will be held at 9:00 a.m., Eastern Time, on December 22, 2025.

Q: *Where will the Annual Meeting be held?*

A. The Annual Meeting will be held virtually by means of a live webcast, as further described herein, which can be accessed at www.virtualshareholdermeeting.com/MBIO2025 when you enter your 16-digit control number included with your proxy card.

Q: *What is the purpose of the Annual Meeting?*

A. At the Annual Meeting, our stockholders will act upon the matters outlined in the Notice of Annual Meeting of Stockholders accompanying this proxy statement, including (i) the election of seven directors for a term of one year, (ii) the ratification of the appointment of KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025, (iii) the approval of an amendment to the Company's 2019 Employee Stock Purchase Plan to increase the number of shares issuable by 250,000 shares and increase the number of shares subject to a Purchase Right thereunder to 10,000, (iv) the approval of an amendment to the Company's 2016 Incentive Plan to increase the number of shares issuable by 2,500,000 shares and (v) the transaction of any other business that may properly come before the Annual Meeting or any adjournment or postponement thereof.

Q. *Who is entitled to vote at our Annual Meeting?*

A. Only stockholders of record at the close of business on, November 18, 2025, which we refer to as the Record Date, are entitled to receive notice of the Annual Meeting and to vote the shares that they held on that date at the Annual Meeting, or any adjournment or postponement thereof. As of the close of business on the Record Date, we had 6,453,701 shares of common stock outstanding, 845,385 shares of Class A common stock outstanding (which converts to 1,127 shares of common stock), and 250,000 shares of Class A Preferred Stock outstanding (which converts to 333 shares of common stock). Each share of common stock entitles its holder to one vote at the Annual Meeting, each share of Class A common stock entitles its holder to one-seven hundred fiftieth of one vote, and each share of Class A Preferred Stock entitled its holder to the number of votes that is equal to one and one-tenth times a fraction, the numerator of which is the sum of (A) the shares of outstanding common stock and (B) the whole shares of common stock into which the shares of outstanding Class A common stock and the Class A Preferred Stock are convertible and the denominator of which is the number of shares of outstanding Class A Preferred Stock. Our Amended and Restated Certificate of Incorporation provides that the holders of the 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 stock held by such holder are convertible as of the Record Date. On April 3, 2023 and January 15, 2025, we effected reverse stock splits of our common stock. As a result, in accordance with the applicable provisions of our Certificate of Incorporation, each share of Class A common stock is entitled to one-seven hundred fiftieth of one vote. A list of stockholders entitled to vote at the Annual Meeting may be examined at our offices located at 95 Sawyer Road, Suite 110, Waltham, Massachusetts 02453, between the hours of 10:00 a.m. and 5:00 p.m., Eastern Time, each business day during the 10 days preceding the Annual Meeting, however, if we determine that a physical in-person inspection is not practicable, such list of stockholders may be made available electronically, upon request.

Stockholders of Record: Shares Registered in Your Name. If on the Record Date your shares were registered directly in your name with our transfer agent, VStock Transfer LLC, then you are a stockholder of record. As a stockholder of record, you may vote virtually at the Annual Meeting or vote by proxy. Whether or not you plan to participate live during the Annual Meeting, we urge you to fill out and return the enclosed proxy card, to ensure your vote is counted.

Beneficial Owner: Shares Registered in the Name of a Broker, Bank, Custodian or Other Nominee. If on the Record Date your shares were held in an account at a brokerage firm, bank, custodian or other nominee, then you are the beneficial owner of shares held in "street name" and these proxy materials are being forwarded to you by that organization. The organization holding your account is considered the stockholder of record for purposes of voting at the Annual Meeting. As a beneficial owner, you have the right to direct your broker, bank, custodian or other nominee on how to vote the shares in your account. You are also invited to attend the Annual Meeting. However, because you are not the stockholder of record, you may not vote your shares virtually at the Annual Meeting unless you request and obtain a valid proxy from your broker, bank, custodian or other nominee.

Q: ***How many votes do I have?***

A. On each matter to be voted upon, each holder of common stock has one vote for each share of common stock owned as of the Record Date; each holder of Class A common stock has one-seven hundred fiftieth of one for each share of Class A common stock owned as of the Record Date; and each holder of Class A Preferred Stock has the number of votes that is equal to one and one-tenth times a fraction, the numerator of which is the sum of (A) the shares of outstanding common stock and (B) the whole shares of common stock into which the shares of outstanding Class A common stock and the Class A Preferred Stock are convertible and the denominator of which is the number of shares of outstanding Class A Preferred Stock, for each share of Class A Preferred Stock owned as of the Record Date.

Q: ***How do I vote?***

A. You may vote during the Annual Meeting by following the instructions posted at www.proxyvote.com and entering your 16-digit control number included with the proxy card, via internet as directed the instructions on the proxy card, or by telephone as indicated in the proxy card.

Whether you hold shares directly as the stockholder of record or indirectly as the beneficial owner of shares held for you by a broker or other nominee (i.e., in "street name"), you may direct your vote without attending the Annual Meeting. You may vote by granting a proxy or, for shares you hold in street name, by submitting voting instructions to your broker or nominee. In most instances, you will be able to do this by internet, telephone or by mail. Please refer to the summary instructions below and those included on your proxy card or, for shares you hold in street name, the voting instruction card provided by your broker or nominee.

By Internet - If you have internet access, you may authorize your proxy from any location in the world by following the instructions on the proxy card.

By Telephone - If you are calling from the United States or Canada, you may authorize your proxy by following the "By Telephone" instructions on the proxy card or, if applicable, the telephone voting instructions that may be described on the voting instruction card sent to you by your broker or nominee.

By Mail - You may authorize your proxy by signing your proxy card and mailing it in the enclosed, postage-prepaid and addressed envelope. For shares you hold in street name, you may sign the voting instruction card included by your broker or nominee and mail it in the envelope provided.

Q: ***What if I have technical difficulties or trouble accessing the virtual Annual Meeting?***

A. We will have technicians ready to assist you with any technical difficulties you may have accessing the virtual Annual Meeting. If you encounter any difficulties accessing the virtual Annual Meeting during the check-in or meeting time, please call the technical support number located on the meeting page.

Q: ***What is a proxy?***

A. A proxy is a person you appoint to vote your shares on your behalf. If you are unable to attend the Annual Meeting, our board of directors is seeking your appointment of a proxy so that your shares may be voted. If you vote by proxy, you will be designating Manuel Litchman, M.D. and Peter Carney our President, Chief Executive Officer and Interim Chief Financial Officer and Corporate Controller, respectively, as your proxies. In such event, Dr. Litchman and Mr. Carney may act on your behalf and have the authority to appoint substitutes to act as your proxy.

Q: *How will my shares be voted if I vote by proxy?*

A. Your proxy will be voted according to the instructions you provide**.** If you complete and submit your proxy but do not otherwise provide instructions on how to vote your shares, your shares will be voted (i) "FOR" the individuals nominated to serve as members of our board of directors, (ii) "FOR" the ratification of KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025, (iii) "FOR" the amendment to the Company's 2019 Employee Stock Purchase Plan to increase the number of shares issuable by 250,000 shares and increase the number of shares subject to a Purchase Right thereunder to 10,000, and (iv) "FOR" the amendment to the Company's 2016 Incentive Plan to increase the number of shares issuable by 2,500,000 shares. Presently, our board of directors does not know of any other matter that may come before the Annual Meeting. However, your proxies are authorized to vote on your behalf, using their discretion, on any other business that properly comes before the Annual Meeting.

Q: *Can I change my vote after I return my proxy card?*

A. Yes. You may revoke your proxy at any time before the final vote at the Annual Meeting by:

If you are the record holder of your shares, you may revoke your proxy in any one of three ways:

- You may send a written notice that you are revoking your proxy to our Corporate Secretary, at our address above (so long as we receive such notice no later than the close of business on the day before the Annual Meeting);
- You may submit a later dated proxy card or by voting again via the internet as described herein; or
- You may attend the virtual Annual Meeting and notify the election officials at the Annual Meeting that you wish to revoke your proxy and vote live during the Annual Meeting by following the instructions posted at www.virtualshareholdermeeting.com/MBIO2025. Simply attending the Annual Meeting will not, by itself, revoke your proxy.

If your shares are held by your broker, bank, custodian or other nominee, you should follow the instructions provided by such broker, bank, custodian or other nominee.

Q: *Is my vote confidential?*

A. Yes. All votes remain confidential.

Q: *How are votes counted?*

A. Before the Annual Meeting, our board of directors will appoint one or more inspectors of election for the meeting. The inspector(s) will determine the number of shares represented at the meeting, the existence of a quorum and the validity and effect of proxies. The inspector(s) will also receive, count, and tabulate ballots and votes and determine the results of the voting on each matter that comes before the Annual Meeting.

Q: *What is the effect of abstentions or broker non-votes?*

A. Abstentions and votes withheld, and shares represented by proxies reflecting abstentions or votes withheld, will be treated as present for purposes of determining the existence of a quorum at the Annual Meeting. They will not be considered as votes "for" or "against" any matter for which the stockholder has indicated their intention to abstain or withhold their vote. Broker non-votes occur when shares are held in street name and the broker submits a proxy, but does not cast a vote on a matter because the broker has not received voting instructions from the beneficial owner, and (i) the broker does not have discretionary voting authority on the matter or (ii) the broker chooses not to vote on a matter for which it has discretionary authority. Pursuant to the New York Stock Exchange ("NYSE"), which governs brokers' use of discretionary authority, brokers are permitted to exercise discretionary voting authority only on "routine" matters when voting instructions have not been timely received from a beneficial owner.

Only the ratification of the selection of KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025 is considered a "routine" matter for which brokers, banks or other nominees may vote uninstructed shares. The other proposals to be voted on at the meeting are not considered "routine" under NYSE rules, so your broker, bank or other nominee cannot vote your shares on any of these other proposals unless you provide to your broker, bank or other nominee voting instructions for each of these matters. If you do not provide voting instruction son a non-routine matter, your shares will not be voted on that matter, which is a "broker non-vote."

Q: ***What constitutes a quorum at the Annual Meeting?***

A. In accordance with Delaware law (the law under which we are incorporated), our Certificate of Incorporation, and our Amended and Restated Bylaws (our "Bylaws"), holders of a majority of the outstanding voting power of the Company, calculated in accordance with our Certificate of Incorporation, present in person or represented by proxy, constitute a quorum, thereby permitting the stockholders to conduct business at the Annual Meeting. Abstentions, votes withheld, and broker non-votes will be included in the calculation of the number of shares considered present at the Annual Meeting for purposes of determining the existence of a quorum.

If a quorum is not present at the Annual Meeting, a majority of the stockholders present virtually and represented by proxy may adjourn the meeting to another date. If an adjournment is for more than 30 days or a new record date is fixed for the adjourned meeting by our board of directors, we will provide notice of the adjourned meeting to each stockholder of record entitled to vote at the adjourned meeting. At any adjourned meeting at which a quorum is present, any business may be transacted that might have been transacted at the originally called meeting.

Q: ***What vote is required to elect our directors for a one-year term?***

A. The affirmative vote of a plurality of the votes of the shares present or represented by proxy at the Annual Meeting is required for the election of each of the nominees for director. "Plurality" means that the seven nominees receiving the largest number of votes will be duly elected as directors. Abstentions, votes withheld, and broker or nominee non-votes will not affect the outcome of director elections.

Q: ***What vote is required to ratify KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025?***

A. The affirmative vote of a majority of the shares present or represented by proxy and entitled to vote at the Annual Meeting is required to approve the ratification of KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025. Abstentions will have the same effect as a negative vote. Because the ratification of KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2025 is a "routine" proposal where brokers have discretionary authority to vote in the absence of instruction, we do not expect any broker non-votes.

Q: What vote is required to approve an amendment to the ESPP to increase the number of shares issuable by 250,000 shares and increase the number of shares subject to a Purchase Right thereunder to 10,000?

A. The affirmative vote of the majority of shares present or represented by proxy and entitled to vote at the Annual Meeting is required to approve the amendment to the ESPP to increase the number of shares issuable by 250,000 shares and increase the number of shares subject to a Purchase Right thereunder to 10,000. Abstentions will have the same effect as a negative vote. However, broker non-votes will not have the effect of a vote against this proposal as they are not considered to be present and entitled to vote on this matter.

Q: ***What vote is required to approve an amendment to the Company's 2016 Incentive Plan to increase the number of shares issuable by 2,500,000 shares?***

A. The affirmative vote of the majority of shares present virtually or represented by proxy at the Annual Meeting and entitled to vote on the subject matter is required to amend the Company's 2016 Incentive Plan to increase the number of shares issuable by 2,500,000 shares. Abstentions will have the same effect as a negative vote. However, broker or nominee non-votes, and shares represented by proxies reflecting broker or nominee non-votes, will not have the effect of a vote against this proposal as they are not considered to be present and entitled to vote on this proposal.

Q: ***How can I find out the results of the voting at the Annual Meeting?***

A. We will announce preliminary voting results at the Annual Meeting. We will also disclose voting results in a Current Report on Form 8-K to be filed with the SEC within four business days after the Annual Meeting.

Q: ***What percentage of our outstanding common stock do our directors and executive officers own?***

A. As of November 18, 2025, our directors and executive officers owned, or have the right to acquire, approximately less than one percent of our outstanding common stock. See the discussion under the heading "Stock Ownership of Our Directors, Executive Officers, and 5% Beneficial Owners" on page 26 for more details.

Q: ***Who was our independent public accountant for the year ending December 31, 2024? Will they be represented at the Annual Meeting?***

A. KPMG LLP was the independent registered public accounting firm that audited our financial statements for the year ended December 31, 2024. We expect a representative of KPMG LLP to be present at the Annual Meeting.

Q: ***Who is paying for this proxy solicitation?***

A. We will pay the entire cost of preparing, assembling, printing, mailing, and distributing these proxy materials and soliciting votes. If you choose to vote over the internet, you are responsible for internet access charges you may incur. If you choose to vote by telephone, you are responsible for telephone charges you may incur. In addition to the mailing of these proxy materials, the solicitation of proxies or votes may be made in person, by telephone or by electronic communication by our directors, officers and employees, who will not receive any additional compensation for such solicitation activities. Proxies also may be solicited by employees and our directors by mail, telephone, facsimile, e-mail or in person.

Q: ***How can I obtain a copy of our Annual Report on Form 10-K?***

A. We have filed our Annual Report on Form 10-K for the year ended December 31, 2024 with the SEC. The Annual Report on Form 10-K is also included in the 2024 Annual Report to Stockholders. You may obtain, free of charge, a copy of our Annual Report on Form 10-K, including financial statements, by writing to our Corporate Secretary or by email at info@mustangbio.com. Upon request, we will also furnish any exhibits to the Annual Report on Form 10-K as filed with the SEC.

CORPORATE GOVERNANCE

Our Board of Directors

Our Bylaws provide that our board of directors (the "Board") shall consist of between one and nine directors, and such number of directors within this range may be determined from time to time by resolution of our Board or our stockholders. Currently, we have seven directors. The following individuals are being nominated to serve on our Board (See "*Proposal 1 - Election of Directors; Nominees*"):

Name	Age	Position(s)	Director Since
Manuel Litchman, M.D.	71	President, Chief Executive Officer, Interim Chief Financial Officer and Director	2017
Michael S. Weiss	59	Chairman of the Board of Directors and Executive Chairman	2015
Adam J. Chill	57	Director	2017
Neil Herskowitz	68	Director	2015
David Jin	35	Director	2024
Lindsay A. Rosenwald, M.D.	70	Director	2015
Michael J. Zelefsky, M.D.	65	Director	2017

The Board does not have a formal policy regarding the separation of the roles of Chief Executive Officer and Chairman of the Board, as the Board believes that it is in the best interests of the Company to make that determination based on the direction of the Company and the current membership of the Board. The Board has determined that having a director who is also the chief executive officer serve as the Chairman is not in the best interest of the Company's stockholders at this time.

The Board held 21 meetings during the fiscal year ended December 31, 2024. Each incumbent director of the Company attended at least 75% of the aggregate of the total number of board meetings held during the period that director served, and the total number of meetings held by all board committees on which that director served during the period of that director's committee service. Further, all directors attended last year's annual meeting.

Mustang has a risk management program overseen by Manuel Litchman, M.D., our President, Chief Executive Officer and Interim Chief Financial Officer. Dr. Litchman and management identify material risks and prioritize them for our Board. Our Board regularly reviews information regarding our credit, liquidity, operations, and compliance as well as the risks associated with each.

The following biographies set forth the names of our directors and director nominees, their ages, the year in which they first became directors, their positions with us, their principal occupations and employers for at least the past five years, any other directorships held by them during the past five years in companies that are subject to the reporting requirements of the Securities Exchange Act of 1934 (the "Exchange Act"), or any company registered as an investment company under the Investment Company Act of 1940, as well as additional information, all of which we believe sets forth each director nominee's qualifications to serve on the Board. There is no family relationship between and among any of our executive officers or directors. On April 7, 2017, we entered into an Executive Employment Agreement with Dr. Litchman, pursuant to which, among other things, the Company agreed to use its best efforts to cause Dr. Litchman to be nominated and reelected to the Board. Except as described herein, there are no arrangements or understandings between any of our executive officers or directors and any other person pursuant to which any of them are elected as an officer or director.

Mustang adheres to the corporate governance standards adopted by The Nasdaq Stock Market LLC ("Nasdaq"). Nasdaq rules require our Board to make an affirmative determination as to the independence of each director. Consistent with these rules, our Board completed its annual review of director independence and considered relationships and transactions between each director or any member of his immediate family, on the one hand, and the Company and our subsidiaries and affiliates, on the other hand. The purpose of this review was to determine whether any such relationships or transactions were inconsistent with a determination that the director is independent. Based on this review, our Board determined that Adam Chill, Neil Herskowitz, and Michael Zelefsky, M.D. are independent under the criteria established by Nasdaq and our Board.

Fortress Biotech, Inc. ("Fortress") beneficially owns capital stock representing more than 50% of the voting power of our outstanding voting stock eligible to vote in the election of directors. As a result, we qualify as a "controlled company" under Nasdaq's corporate governance rules, and we avail ourselves of certain "controlled company" exemptions. As a controlled company, we are not required to have a majority of "independent directors" on our Board as defined under Nasdaq rules, or have a compensation, nominating or governance committee composed entirely of independent directors. Despite qualifying as a controlled company, we have a separately constituted Compensation Committee consisting entirely of independent directors.

Current Directors/Nominees

Manuel Litchman, M.D. - President, Chief Executive Officer, and Director

Dr. Litchman has served as our President and Chief Executive Officer, and as a member of our Board since April 2017, and as Interim Chief Financial Officer since November 2024. Dr. Litchman joined us from Arvinas, LLC, where he served as President and Chief Executive Officer. While at Arvinas, Dr. Litchman oversaw the advancement of the company's pipeline of protein-degradation therapeutics for the treatment of cancers and other diseases toward Investigational New Drug applications and secured multi-target discovery collaborations with Merck and Genentech. Prior to Arvinas, Dr. Litchman spent more than 18 years with Novartis Pharmaceuticals Corporation, where he held positions of increasing responsibility related to the development of Novartis' oncology pipeline. Most recently, Dr. Litchman served as Senior Vice President and Executive Global Program Head, CTL019, Cell & Gene Therapies Unit, where he led a collaboration with the University of Pennsylvania investigating chimeric antigen receptor modified T cells ("CAR Ts") directed against CD19 on B cell malignancies. Prior to the CTL019 collaboration, Dr. Litchman served as Novartis' Vice President and Head, Oncology Business Development & Licensing. Earlier in his career, Dr. Litchman was a senior equity analyst at Ursus Capital and directed oncology/immunology clinical research at Hoffmann-La Roche Inc. Dr. Litchman received his M.D. from Yale University School of Medicine, and his B.A. from Princeton University. He completed his internal medicine residency and hematology-oncology fellowship at New York-Presbyterian/Weill Cornell Medical Center. Based on Dr. Litchman's biotechnology and pharmaceutical industry experience and in-depth understanding of our business, we believe that Dr. Litchman has the appropriate set of skills to serve as a member of the Board.

Michael S. Weiss - Chairman of the Board of Directors and Executive Chairman

Mr. Weiss has served as Chairman of our Board since May 2015 and has also served as our Executive Chairman since January 2017. He previously served as our interim President & Chief Executive Officer from March 2015 to April 2017. He is also a board member and the Executive Vice Chairman, Strategic Development of Fortress Biotech, Inc., a position he has held since February 2014, and previously served as the Chairman of the board of directors of Checkpoint Therapeutics, Inc., prior to its acquisition by Sun Pharmaceuticals in May 2025. Since December 2011, Mr. Weiss has served in multiple capacities at TG Therapeutics, Inc., and is currently its Chairman, President and Chief Executive Officer. Mr. Weiss earned his J.D. from Columbia Law School and his B.S. in Finance from The University at Albany. He began his professional career as a lawyer with Cravath, Swaine & Moore LLP. From 2002 to 2009, Mr. Weiss was the Chairman and Chief Executive Officer of Keryx Biopharmaceuticals, Inc. Additionally, Mr. Weiss co-founded and served as Co-Portfolio Manager and Managing Partner of Opus Point Partners, LLC from 2009 to 2019. Based on Mr. Weiss's biotechnology and pharmaceutical industry experience, as well as his extensive management experience, we believe that Mr. Weiss has the appropriate set of skills to serve as a member of the Board.

Effective January 1, 2017, our Board approved and authorized the execution of a Board Advisory Agreement with Caribe BioAdvisors, LLC (the "Advisor"), which is owned by Michael S. Weiss, to provide the Board with the advisory services of Mr. Weiss as Chairman of the Board and Executive Chairman. Pursuant to the Advisory Agreement, the Advisor is paid an annual cash fee of $60,000, in addition to any and all annual equity incentive grants paid to members of the Board.

Adam J. Chill - Director

Mr. Chill has served as a member of our Board since June 2017. Mr. Chill is the President of and a Portfolio Manager at Kingsbrook Partners LP, an alternative asset management firm he co-founded in March 2009. From February 2001 to March 2009, Mr. Chill was a Portfolio Manager and Managing Director at Highbridge Capital Management, LLC, an alternative asset management firm owned by J.P. Morgan Asset Management. At Highbridge, Mr. Chill was responsible for structuring, negotiating and monitoring Highbridge's portfolio of structured investments in public and private companies worldwide. From April 2000 to February 2001, Mr. Chill worked at Angelo, Gordon & Co., an alternative asset management firm. From October 1992 to April 2000, Mr. Chill was a corporate attorney specializing in securities and mergers and acquisitions at Stroock & Stroock & Lavan LLP. Mr. Chill is a co-founder of the Bayit Association of New Jersey. Mr. Chill received his B.A., magna cum laude, from Yeshiva University and his J.D. from Columbia University School of Law, where he was a Harlan Fiske Stone Scholar. Based on Mr. Chill's extensive investment experience and knowledge of the biotechnology industry, we believe that Mr. Chill has the appropriate set of skills to serve as a member of the Board.

Neil Herskowitz - Director

Mr. Herskowitz has served as a member of our Board since August 2015. Mr. Herskowitz has served as the managing member of the ReGen Group of companies, located in New York, since 1998, which include ReGen Capital Investments LLC and Riverside Claims Investments LLC. He has also served as the President of its affiliate, Riverside Claims LLC, since June 2004. Mr. Herskowitz serves as a member of the board of directors for two of our affiliates, Checkpoint Therapeutics, Inc. and Avenue Therapeutics, Inc. Mr. Herskowitz received a B.B.A. in Finance from Bernard M. Baruch College in 1978. Based on Mr. Herskowitz's financial industry experience and in-depth understanding of our business, we believe that Mr. Herskowitz has the appropriate set of skills to serve as a member of the Board.

David Jin - Director

Mr. Jin has served as a member of our Board since October 2024. Mr. Jin has served as the Chief Financial Officer of Fortress since August 2022 and Head of Corporate Development since May 2020. He also serves as Interim Chief Operating Officer, Chief Financial Officer and Corporate Secretary of Avenue Therapeutics, Inc. (a Fortress partner company) and as a member of the board of directors of Crystalys Therapeutics. Since August 2022, Mr. Jin has served as Treasurer of Fortress' private subsidiaries, including Cyprium Therapeutics, Urica Therapeutics, Helocyte, and Cellvation. From March 2022 to August 2022, he served as Interim Chief Executive Officer at Avenue Therapeutics. Previously, he was on the investment team in the Private Equity & Real Assets group at Barings, Director of Corporate Development at Sorrento Therapeutics, Vice President of Healthcare Investment Banking at FBR & Co., and was in the management consulting group at IMS Health (now IQVIA). He holds a B.S. in Industrial Engineering & Management Sciences with a double-major in Mathematical Methods in the Social Sciences from Northwestern University. Based on Mr. Jin's financial experience and knowledge of the biotechnology industry, we believe that Mr. Jin has the appropriate set of skills to serve as a member of the Board.

Lindsay A. Rosenwald, M.D. - Director

Dr. Rosenwald has served as a member of our Board since our inception. Dr. Rosenwald has been a member of the board of directors of Fortress Biotech, Inc. since October 2009 and has served as its Chairman, President and Chief Executive Officer since December 2013. From November 2014 to August 2015, Dr. Rosenwald served as Interim President and CEO of Checkpoint Therapeutics, Inc. and remained on that company's board of directors until its acquisition by Sun Pharmaceuticals in May 2025. He also serves on the board of directors of Avenue Therapeutics, Inc. and Journey Medical Corporation. Prior to that, from 1991 to 2008, he served as the Chairman of Paramount BioCapital, Inc. Over the last 30 years, Dr. Rosenwald has acted as a biotechnology entrepreneur and has been involved in the founding and recapitalization of numerous public and private biotechnology and life sciences companies. Dr. Rosenwald received his B.S. in finance from Pennsylvania State University and his M.D. from Temple University School of Medicine. We believe that Dr. Rosenwald's extensive biotechnology, pharmaceutical and finance expertise, as well as his medical background and in-depth understanding of our businesses, makes him an exemplary candidate to continue serving on our Board.

Michael J. Zelefsky, M.D. - Director

Dr. Zelefsky has served as a member of our Board since June 2017. Dr. Zelefsky has served as a Member at NYU Langone since 2023 and before that was a Member at the Memorial Sloan-Kettering Cancer Center ("MSKCC") Department of Radiation Oncology since 2005. During his tenure at MSKCC, he served as Chief of Memorial Sloan-Kettering's Brachytherapy Services since 2000 and was a Professor of Radiation Oncology at Weill Cornell Medical College, Cornell University since 1994. He is a recognized expert in radiation therapy and helped develop and enhance MSKCC's prostate brachytherapy program. Dr. Zelefsky received a Bachelor of Arts in Biology (summa cum laude) from Yeshiva University in 1982 and a Medical Doctor degree from Albert Einstein College of Medicine in 1986. Dr. Zelefsky is currently Editor-in-Chief of *Brachytherapy* and has previously served as president of the American Brachytherapy Society. Based on Dr. Zelefsky's extensive experience and background in oncology, we believe that Dr. Zelefsky has the appropriate set of skills to serve as a member of the Board.

Communicating with the Board of Directors

Our Board has established a process by which stockholders can send communications to the Board. You may communicate with the Board as a group, or to specific directors, by writing to our Corporate Secretary, at our offices located at 95 Sawyer Road, Suite 110, Waltham, Massachusetts 02453. The Corporate Secretary will review all such correspondence and regularly forward to our Board a summary of all correspondence and copies of all correspondence that, in the opinion of the Corporate Secretary, deals with the functions of the Board that he otherwise determines requires their attention. Directors may at any time review a log of all correspondence we receive that is addressed to members of our Board and request copies of any such correspondence. Concerns relating to accounting, internal controls, or auditing matters may be communicated in this manner, or may be submitted on an anonymous basis via e-mail at *info@mustangbio.com*. These concerns will be immediately brought to the attention of our Audit Committee and handled in accordance with procedures established by our Audit Committee.

Audit Committee

The Audit Committee currently consists of Adam J. Chill, Neil Herskowitz, and Michael J. Zelefsky, M.D. Mr. Chill chairs the Audit Committee.

The Audit Committee held four meetings during the fiscal year ended December 31, 2024. The duties and responsibilities of the Audit Committee are set forth in the Charter of the Audit Committee which was recently reviewed by our Audit Committee. A copy of the Charter of the Audit Committee is available on our website, located at ir.mustangbio.com. Among other things, the duties and responsibilities of the Audit Committee include reviewing and monitoring our financial statements and internal accounting procedures, the selection of, consultation with and review of the services provided by our independent registered public accounting and identifying and assessing any related party transactions in collaboration with counsel, accountants and management. Our Audit Committee has sole discretion over the retention, compensation, evaluation and oversight of our independent registered public accounting firm.

The SEC and Nasdaq have established rules and regulations regarding the composition of audit committees and the qualifications of audit committee members. Our Board has examined the composition of our Audit Committee and the qualifications of our Audit Committee members in light of the current rules and regulations governing audit committees. Based upon this examination, our Board has determined that each member of our Audit Committee is independent and is otherwise qualified to be a member of our Audit Committee in accordance with the rules of the SEC and Nasdaq.

Additionally, the SEC requires that at least one member of the Audit Committee have a "heightened" level of financial and accounting sophistication. Such a person is known as the "audit committee financial expert" under the SEC's rules. Our Board has determined that Mr. Chill is an "audit committee financial expert," as the SEC defines that term, and is an independent member of our Board and our Audit Committee. Please see Mr. Chill's biography under "*Corporate Governance - Our Board of Directors*" beginning on page 6 for a description of his relevant experience.

The report of the Audit Committee can be found on page 14 of this proxy statement.

Compensation Committee

The Compensation Committee currently consists of Adam J. Chill, Neil Herskowitz and Michael J. Zelefsky, M.D. Mr. Herskowitz chairs the Compensation Committee.

The Compensation Committee held one meeting during the fiscal year ended December 31, 2024. The duties and responsibilities of the Compensation Committee are set forth in the Charter of the Compensation Committee which was recently reviewed by our Compensation Committee. A copy of the Charter of the Compensation Committee is available on our website, located at *ir.mustangbio.com*. As discussed in its Charter, among other things, the duties and responsibilities of the Compensation Committee include approving any corporate goals and objectives relating to the compensation of our executive officers, evaluating the performance of our executive officers, and administering all of our executive compensation programs, including, but not limited to, our incentive and equity-based plans. The Compensation Committee evaluates the performance of all of our executive officers on an annual basis and reviews and approves on an annual basis all compensation programs and awards relating to such officers. The Compensation Committee applies discretion in the determination of individual executive compensation packages to ensure compliance with our compensation philosophy. Our Chief Executive Officer makes recommendations to the Compensation Committee with respect to the compensation packages for officers other than himself.

Nasdaq has established rules and regulations regarding the composition of compensation committees and the qualifications of compensation committee members. Our Board has examined the composition of our Compensation Committee and the qualifications of our Compensation Committee members in light of the current rules and regulations governing compensation committees. Based upon this examination, our Board has determined that each member of our Compensation Committee is independent and is otherwise qualified to be a member of our Compensation Committee in accordance with such rules.

Nominating Process

We do not currently have a nominating committee or any other committee serving a similar function. Although we do not have a written charter in place to select director nominees, our Board has adopted resolutions regarding the director nomination process. We believe that the current process in place functions effectively to select director nominees who will be valuable members of our Board.

We identify potential nominees to serve as directors through a variety of business contacts, including current executive officers, directors, community leaders and stockholders. We may, to the extent deemed appropriate by the Board, retain a professional search firm and other advisors to identify potential nominees.

We will also consider candidates recommended by stockholders for nomination to our Board. A stockholder who wishes to recommend a candidate for nomination to our Board must submit such recommendation to our Corporate Secretary at our offices located at 95 Sawyer Road, Suite 110, Waltham, Massachusetts 02453. Pursuant to our Bylaws, any recommendation must be received not less than 50 calendar days nor more than 90 calendar days before the anniversary date of the previous year's annual meeting.

We believe that our Board as a whole should encompass a range of talent, skill, and expertise enabling it to provide sound guidance with respect to our operations and interests. Our independent directors evaluate all candidates to our Board by reviewing their biographical information and qualifications. If the directors determine that a candidate is qualified to serve on our Board, such candidate is interviewed by at least one of the directors and our Chief Executive Officer. Other members of the Board also have an opportunity to interview qualified candidates. The directors then determine, based on the background information and the information obtained in the interviews, whether to recommend to the Board that the candidate be nominated for approval by the stockholders to fill a directorship. With respect to an incumbent director whom the directors are considering as a potential nominee for re-election, the directors review and consider the incumbent director's service during his or her term, including the number of meetings attended, level of participation, and overall contribution to the Board. The manner in which the directors evaluate a potential nominee will not differ based on whether the candidate is recommended by our directors or stockholders.

We consider the following qualifications, among others, when making a determination as to whether a person should be nominated to our Board: the independence of the director nominee; the nominee's character and integrity; financial literacy; level of education and business experience, including experience relating to biopharmaceutical companies; whether the nominee has sufficient time to devote to our Board; and the nominee's commitment to represent the long-term interests of our stockholders. We review candidates in the context of the current composition of the Board and the evolving needs of our business. We believe that each of the current members of our Board (who are also our director nominees) has the requisite business, biopharmaceutical, financial or managerial experience to serve as a member of the Board, as described above in their biographies under the heading "Corporate Governance - Current Directors/Nominees." We also believe that each of the current members of our Board has other key attributes that are important to an effective board, including integrity, high ethical standards, sound judgment, analytical skills, and the commitment to devote significant time and energy to service on the Board and its committees.

We do not have a formal policy in place with regard to diversity in considering candidates for our Board, but the Board strives to nominate candidates with a variety of complementary skills so that, as a group, the Board will possess the appropriate talent, skills and expertise to oversee our business.

Code of Business Conduct and Ethics

We adopted a Code of Ethics (the "Code"), which applies to all of our directors and employees, including our principal executive officer and principal financial officer. The Code includes guidelines dealing with the ethical handling of conflicts of interest, compliance with federal and state laws, financial reporting, and our proprietary information. The Code also contains procedures for dealing with and reporting violations of the Code. The Code is disclosed, and any amendments thereto, or any waivers of its requirements will be disclosed, on our website at *www.mustangbio.com*.

Insider Trading Policy; Policy Prohibiting Hedging and Speculative Trading

We have adopted an Insider Trading Policy that governs the purchase, sale, and other dispositions of our securities on the basis of material non-public information by directors, officers, employees, consultants and contractors. We believe these policies and procedures are reasonably designed to promote compliance with insider trading laws, rules and regulations, and applicable Nasdaq listing standards.

Pursuant to our Insider Trading Policy, our officers, directors, and employees are prohibited from engaging in speculative trading, including hedging transactions or short sale transactions with respect to Company securities.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FEES AND OTHER MATTERS

KPMG LLP, the independent registered public accounting firm that audited our financial statements for the year ended December 31, 2024, has served as our independent registered public accounting firm since September 2021. We expect a representative of KPMG LLP to be present at the Annual Meeting. The representative will have an opportunity to make a statement and will be available to answer your questions.

Our Board has asked the stockholders to ratify the selection of KPMG LLP as our independent registered public accounting firm. See "*Proposal Two: Ratification of Appointment of KPMG LLP as Our Independent Registered Public Accounting Firm*" on page 29 of this proxy statement. The Board has reviewed the fees described below and concluded that the payment of such fees is compatible with maintaining KPMG LLP's independence. All proposed engagements of KPMG LLP, whether for audit services, audit-related services, tax services, or permissible non-audit services, were pre-approved by our Board.

Audit Fees

For the year ended December 31, 2024, KPMG LLP billed us an aggregate of approximately $412,000 in fees and professional services rendered in connection with the audit of our annual financial statements included in our Annual Reports on Form 10-K for the 2024 fiscal year and the review of our financial statements included in our Quarterly Reports on Form 10-Q during that fiscal year.

For the year ended December 31, 2023, KPMG LLP billed us an aggregate of approximately $372,000 in fees and professional services rendered in connection with the audit of our annual financial statements included in our Annual Reports on Form 10-K for the 2023 fiscal year and the review of our financial statements included in our Quarterly Reports on Form 10-Q during that fiscal year.

Audit-Related Fees

For the year ended December 31, 2024, and 2023, KPMG LLP billed us an aggregate of approximately $255,000 and $70,000, respectively, in fees for audit-related services rendered in connection with securities offerings and registration statements, in addition to the fees described above under the heading "Audit Fees."

Tax Fees

During the fiscal years ended December 31, 2024 and 2023 we were not billed by KPMG LLP for fees for professional services rendered for tax compliance, tax advice, and tax planning services.

All Other Fees

During the fiscal years ended December 31, 2024 and 2023, we were not billed by KPMG LLP for any fees for services, other than those described above, rendered to us for each of those fiscal years.

Pre-Approval of Services

Our Audit Committee has established a policy setting forth the procedures under which services provided by our independent registered public accounting firm will be pre-approved by our Audit Committee. The potential services that might be provided by our independent registered public accounting firm fall into two categories:

- Services that are permitted, including the audit of our annual financial statements, the review of our quarterly financial statements, related attestations, benefit plan audits and similar audit reports, financial and other due diligence on acquisitions, and federal, state, and non-US tax services; and

- Services that may be permitted, subject to individual pre-approval, including compliance and internal-control reviews, indirect tax services such as transfer pricing and customs and duties, and forensic auditing.

Services that our independent registered public accounting firm may not legally provide include such services as bookkeeping, certain human resources services, internal audit outsourcing, and investment or investment banking advice.

All proposed engagements of our independent registered public accounting firm, whether for audit services or permissible non-audit services, are pre-approved by our Audit Committee. We jointly prepare a schedule with our independent registered public accounting firm that outlines services which we reasonably expect we will need from our independent registered public accounting firm and categorize them according to the classifications described above. Each service identified is reviewed and approved or rejected by our Audit Committee.

REPORT OF THE AUDIT COMMITTEE

In monitoring the preparation of our financial statements, the Audit Committee met with both management and KPMG LLP, our independent registered public accounting firm for the year ended December 31, 2024, to review and discuss all financial statements prior to their issuance and to discuss any and all significant accounting issues. Management and our independent registered public accounting firm advised the Audit Committee that each of the financial statements was prepared in accordance with generally accepted accounting principles. The Audit Committee has discussed with KPMG LLP the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board (PCAOB) and the SEC. The Audit Committee has also discussed the independence of KPMG LLP and has received from KPMG LLP the letter and written disclosures required by the applicable requirements of the PCAOB regarding its communications with the Audit Committee concerning independence.

Finally, the Audit Committee continues to monitor the scope and adequacy of our internal controls and other procedures, including any and all proposals for adequate staffing and for strengthening internal procedures and controls where appropriate and necessary. These measures include, without limitation, a quarterly review of related party transactions and relationships pursuant to regularly updated reports prepared by Fortress' internal legal counsel and our principal financial officer.

On the basis of these reviews and discussions, the Audit Committee approved the inclusion of our audited financial statements in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, for filing with the SEC.

By the Audit Committee,

Adam J. Chill, Chair
Neil Herskowitz
Michael J. Zelefsky

December 3, 2025
Waltham, Massachusetts

OUR EXECUTIVE OFFICERS

Executive Officers

Our current executive officers are as follows:

Name	Age	Position	Executive Officer Since
Manuel Litchman, M.D.	71	President, Chief Executive Officer, Interim Chief Financial Officer and Director	2017

No executive officer is related by blood, marriage or adoption to any other director or executive officer.

Manuel Litchman, M.D. – *President, Chief Executive Officer, Interim Chief Financial Officer and Director*

Dr. Litchman's biography is presented under "*Corporate Governance – Current Directors/Nominees*" on page 6 of this proxy statement.

EXECUTIVE COMPENSATION

Summary Compensation Table

As determined in accordance with SEC rules, our "named executive officers" ("NEOs") for purposes of this proxy statement are the individuals set forth below, which includes all executive officers serving during 2024. The following table sets forth information concerning compensation paid by us to our NEOs for their services rendered to us in all capacities during the years ended December 31, 2024 and 2023.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards [1] ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)	All Other Compensation ($)	Total ($)
Manuel Litchman, M.D.	2024	$ 485,500	$ —	$ —	$ —	$ —	$ 12,542 [3]	$ 498,042
President, Chief Executive Officer and Interim Chief Financial Officer	2023	$ 481,125	$ —	$ 21,050	$ —	$ —	$ 12,304 [3]	$ 514,479
James Murphy	2024	—	—	—	—	—	199,485 [4]	199,485
Former Interim Chief Financial Officer								

(1) The amounts in the "Stock Awards" column reflect the aggregate grant date fair value of restricted stock units granted during the year computed in accordance with the provisions of FASB ASC Topic 718. The assumptions used in calculating these amounts are incorporated by reference to Note 10 to the financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2024.

(2) In 2024, the Compensation Committee decided to not pay 2023 and 2024 annual cash incentive bonuses. See the "Annual Cash Incentive Bonus" section below for additional details.

(3) All other compensation for Dr. Litchman is comprised of Company matching 401(k) contributions.

(4) Effective January 19, 2024, Mr. Murphy was appointed as our Interim Chief Financial Officer, although he remained a consultant employed by Danforth Advisors, LLC ("Danforth") and was contracted to work for us on a part time basis, as described under "Narrative to Summary Compensation Table" below. The amount shown represents fees payable to Danforth in connection with the Chief Financial Officer services provided by Mr. Murphy based on a negotiated hourly rate. On November 12, 2024, Mr. Murphy resigned as our Interim Chief Financial Officer. Mr. Murphy's resignation was not a result of any disagreement on any matter relating to our operations, policies or practices.

Narrative to Summary Compensation Table

Employment Agreements

Dr. Litchman

In April 2017, we entered into an employment agreement with Dr. Litchman, our President, Chief Executive Officer and Interim Chief Financial Officer, pursuant to which he received an initial annual base salary of $395,000. As part of his annual review in January 2023, the Board increased Dr. Litchman's annual base salary to $485,500 effective as of April 1, 2023. As part of his 2024 annual review, the Board did not increase Dr. Litchman's annual base salary. The employment agreement further provides eligibility for an incentive bonus linked to the realization of certain corporate milestones to be established annually by the Board or the Compensation Committee. Dr. Litchman's target annual bonus is equal to fifty percent (50%) of his annual salary, and the Board or the Compensation Committee will determine the actual payout amount each year. Dr. Litchman's annual bonuses for 2023 and 2024 are described under "Annual Incentive Bonus" below. The employment agreement provides that if we terminate Dr. Litchman without cause or if he resigns for good reason, as those terms are defined in the employment agreement, he will be entitled to: (i) severance payments at a rate equal to his base salary then in effect for a period of 12 months following his termination date; (ii) a pro-rata share of the annual incentive bonus for the year in which the termination occurred, to be paid when and if such bonus would have been paid under the employment agreement; (iii) accelerated partial vesting of all unvested time-based equity awards with respect to the same number of shares that would have vested if Dr. Litchman had continued in employment for one year following the termination date; and (iv) if Dr. Litchman timely elects continued health insurance coverage under COBRA, the entire premium necessary to continue such coverage for Dr. Litchman and Dr. Litchman's eligible dependents until the conclusion of the time when Dr. Litchman is receiving continuation of base salary payments or until Dr. Litchman becomes eligible for group health insurance coverage under another employer's plan, whichever occurs first, provided however that we have the right to terminate such payment of COBRA premiums on behalf of Dr. Litchman and instead pay him a lump sum amount equal to the COBRA premium times the number of months remaining in the specified period if we determine in our discretion that continued payment of COBRA premiums is or may be discriminatory under Section 105(h) of the Internal Revenue Code. In addition, if Dr. Litchman is terminated without cause or resigns for good reason within twelve months following a change in control, he will be entitled to the severance benefits described in (i), (ii) and (iv) of the immediately preceding sentence, as well as 100% accelerated vesting of the options and other equity awards granted to him. In the event Dr. Litchman's employment is terminated due to his death or disability, he or his estate will receive continuing salary payments for ninety days and a pro-rata share of the annual incentive bonus for the year in which the termination occurred, to be paid when and if such bonus would have been paid under the employment agreement. In each case, the severance benefits are conditioned upon Dr. Litchman's execution and non-revocation of a release of claims against us and compliance with certain non-solicitation and non-competition covenants during his employment and for a period of six months thereafter. Also, the severance benefits are subject to reduction to avoid the imposition of excise taxes under Sections 280G and 4999 of the Internal Revenue Code of 1986, as amended (the "IRC"), provided that such reduction would result in a better after-tax result for Dr. Litchman.

Mr. Murphy

Mr. Murphy provided consulting services to us pursuant to a consulting agreement between us and Danforth Advisors, LLC and received no compensation directly from us.

Annual Cash Incentive Bonus

In 2024, Dr. Litchman was eligible to earn a target annual cash incentive equal to 50% of his base salary per the terms of his Employment Agreement.

Dr. Litchman's annual cash incentive bonus is based upon our performance against pre-established corporate goals and objectives, which included a combination of clinical and nonclinical goals related to our products as well as other corporate development goals, and his individual performance based upon subjective performance reviews. In 2024, the Compensation Committee decided not to pay 2023 and 2024 annual cash incentive bonuses to preserve our limited cash resources.

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Equity Awards

We maintain the Mustang Bio, Inc. 2016 Incentive Plan (the "EIP"), pursuant to which it may, from time to time, grant equity awards to its service providers, including its executive officers and directors. However, no equity awards were granted in 2024.

Outstanding Equity Awards at Fiscal Year-End 2024

	Option Awards				Stock Awards	
Name	**Number of securities underlying unexercised options (#) exercisable**	**Number of securities underlying unexercised options (#) unexercisable**	**Option exercise price ($)**	**Option Expiration Date**	**Number of Shares or Units of Stock That Have Not Vested (#)**	**Market Value of Shares or Units of Stock That Have Not Vested[(1)] ($)**
Manuel Litchman M.D.	868 (2)	520 (2)	$ 4,297.50	4/24/2027	137 (3)	$ 1,212
James Murphy	—	—	—	—	—	—

(1) Market value is based on $8.85 per share, the closing price of our common stock on the Nasdaq Capital Market on December 31, 2024, the last trading day of the fiscal year.

(2) The option vests as follows: (i) one half of the option will vest over time, with 25% of such shares vesting after twelve months of employment, and the remaining shares vesting in twelve equal quarterly installments thereafter, subject to Dr. Litchman's "continuous service" (as defined in the EIP) to the Company on each vesting date; (ii) the remaining one half of the option will vest and become exercisable upon the occurrence of the following milestones being achieved, in each case subject to Dr. Litchman's continuous service to the Company on the date of such occurrences: (A) 25% of such shares will vest upon the dosing of the first patient in the first Phase 2 clinical trial of any Company product candidate; (B) 25% of such shares will vest upon the dosing of the first patient in the first Phase 2 clinical trial of a second Company product candidate; (C) 25% of such shares will vest upon our achievement of a fully-diluted market capitalization of $500,000,000; and (D) 25% of such shares will vest upon our achievement of a fully-diluted market capitalization of $1 billion. Notwithstanding the foregoing, in the event that a Phase 2 clinical trial for either of the Company product candidates referenced in subsections (i) or (ii) of this paragraph is bypassed, the corresponding percentage of the Performance Option grant that would have otherwise vested pursuant to subsections (i) or (ii) of this paragraph will vest upon the earlier of (x) the dosing of the first patient in the first Phase 3 clinical trial for that Company product candidate, or (y) the filing of a Biologics License Application or New Drug Application with the U.S. Food and Drug Administration, or alternatively the filing of an equivalent regulatory filing with a foreign regulatory agency, with respect to that Company product candidate.

(3) Subject to Dr. Litchman's continuous service, the restricted stock units vest as follows: (i) 66 shares vested on April 24, 2025; (ii) 46 shares will vest on April 24, 2026; and (iii) 25 shares will vest on April 24, 2027.

Policies and Practices for Granting Equity Awards

We do not have a formal written policy in place with regard to the timing of awards of options in relation to the disclosure by us of material nonpublic information, but the Board and the Compensation Committee do not seek to time equity grants to take advantage of information, either positive or negative, about the Company that has not been publicly disclosed. The Board and Compensation Committee grant awards without regard to the share price or the timing of the release of material nonpublic information and does not time grants for the purpose of affecting the value of executive compensation. During the fiscal year ended December 31, 2024, no equity awards were granted.

PAY VERSUS PERFORMANCE

The following table shows the past three fiscal years' total compensation for our named executive officers as set forth in the Summary Compensation Table, the "compensation actually paid" to our named executive officers (as determined under SEC rules), our total shareholder return ("TSR"), and our net income.

SEC rules require certain adjustments be made to the Summary Compensation Table totals to determine Compensation Actually Paid as reported in the Pay Versus Performance Table. Compensation Actually Paid does not necessarily represent cash and/or equity value transferred to the applicable named executive officer without restriction, but rather is a valuation calculated under applicable SEC rules. In general, Compensation Actually Paid is calculated as summary compensation table total compensation adjusted to (a) include the value of any pension benefit (or loss) attributed to the past fiscal year, including on account of any amendments adopted during such year; and (b) include the fair market value of equity awards as of December 31, 2024 or, if earlier, the vesting date (rather than the grant date) and factor in dividends and interest accrued with respect to such awards. For purposes of the disclosure below, no pension valuation adjustments were required.

Year	Summary Compensation Table Total for Principal Executive Officer ("PEO")(1)	Compensation Actually Paid to PEO(2)	Average Summary Compensation Table Total for Non-PEO Named Executive Officers ("NEOs")(3)	Average Compensation Actually Paid to Non-PEO NEOs(3)	Value of Initial Fixed $100 Investment Based on Total Shareholder Return ("TSR")(4)	Net Income (Loss) (thousands)(6)
2024	$ 498,042	$ 487,213	$ 199,485	$ —	$ $2.99	$ (15,752)
2023	514,479	426,916	244,283	—	$22.79	(51,602)
2022	636,089	417,047	347,104	342,032	$23.79	(77,525)

(1) Dr. Litchman was the Registrant's PEO for each of the 2024, 2023 and 2022 fiscal years.

(2) The amounts disclosed reflect the adjustments listed in the tables below to the amounts reported in the Summary Compensation Table for PEO:

Year	Less: Grant Date Value of Equity Awards	Plus: Change in Value of Awards Granted During the Current Year	Plus: Vesting Date Value of Awards that Vested During the Year	Plus: Year-Over-Year Change in Fair Value of Unvested Awards	Plus: Change in Value of Awards Vested During the Current Year	Dividends on Unvested Awards	Total Adjustments
2024	$ —	$ —	$ 1,505	$ (8,035)	$ (4,300)	$ —	$ (10,829)

(3) For the 2024 fiscal year, our Non-PEO NEO was James Murphy. Mr. Murphy was an external consultant, whose compensation is not included in this table. The amounts disclosed reflect the adjustments listed in the tables below to the amounts reported in the Summary Compensation Table for Non-PEO NEO:

Year	Less: Grant Date Value of Equity Awards	Plus: Change in Value of Awards Granted During the Current Year	Plus: Vesting Date Value of Awards that Vested During the Year	Plus: Year-Over-Year Change in Fair Value of Unvested Awards	Plus: Change in Value of Awards Vested During the Current Year	Dividends on Unvested Awards	Total Adjustments
2024	$ —	$ —	$ —	$ —	$ —	$ —	$ —

(4) Calculated by dividing the sum of the cumulative amount of dividends for the measurement period, assuming dividend reinvestment, and the difference between the share price of our common stock at the end and the beginning of the measurement period by the share price of our common stock at the beginning of the measurement period.

(5) The dollar amounts reported represent the amount of net income (loss) reflected in our audited financial statements for the applicable year.

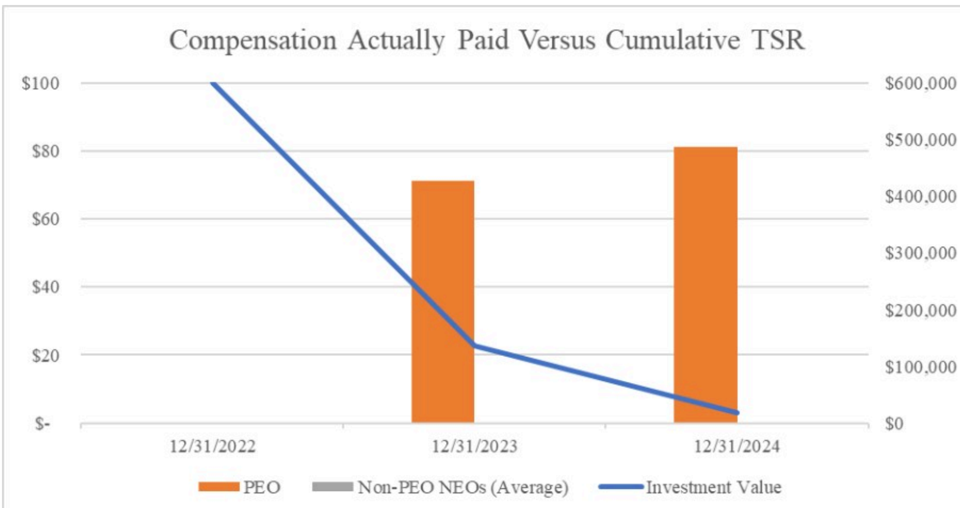
Analysis of the Information Presented in the Pay Versus Performance Table

Compensation Actually Paid and Net Income (Loss)

Due to the nature of our Company's consolidated financials and primary focus on research and development of novel therapies, our Company has not historically utilized net income (loss) as a performance measure for our executive compensation program. From 2023 to 2024, our net loss decreased, and the Compensation Actually Paid our PEO increased. The Compensation Actually Paid our Non-PEO NEOs was unchanged between those years.

PEO and Non-PEO NEO Compensation Actually Paid and Company Total Shareholder Return

The following chart sets forth the relationship between Compensation Actually Paid to our PEO, the average of Compensation Actually Paid to our Non-PEO NEOs, and the Company's TSR over the period covering fiscal years 2023 and 2024. A component of our executive compensation is equity-based to align compensation with performance, but also includes other appropriate incentives such as cash bonuses that are designed to incentivize our executives to achieve annual corporate goals. We believe the equity-based compensation strongly aligns our PEO and Non-PEO NEOs' interests with those of our stockholders to maximize long-term value and encourages long-term employment.



All information provided above under the "Pay Versus Performance" heading will not be deemed to be incorporated by reference in any filing of our company under the Securities Act of 1933, as amended (the "Securities Act"), whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

SECURITIES AUTHORIZED FOR ISSUANCE UNDER EQUITY COMPENSATION PLANS

The following table contains information about our equity compensation plans as of December 31, 2024.

Plan Category	Equity Compensation Plan Information Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	1,521	$ 4,297.50	6,946
Equity compensation plans not approved by security holders	—	—	—
Total	1,521	$ 4,297.50	6,946

Our equity compensation plans consist of the EIP, and the Mustang Bio, Inc. 2019 Employee Stock Purchase Plan, which were each approved by our stockholders. We do not have any equity compensation plans or arrangements that have not been approved by our stockholders.

DIRECTOR COMPENSATION

Director Compensation Program

In January 2016, the Board adopted a Non-Employee Directors Compensation Plan for our non-employee directors, which determines the cash and equity compensation payable to our non-employee directors. The Non-Employee Directors Compensation Plan provides for our non-employee directors to receive the following compensation:

Cash Compensation:

- $50,000 annual retainer; and
- $10,000 additional annual retainer for the Audit Committee Chair.

However, for Mr. Weiss, in lieu of the cash compensation described above, $60,000 of annual cash compensation is paid to the Advisor according to the Advisory Agreement

Equity Compensation:

- Initial Equity Grant: 1,000 shares of restricted stock, which shares shall vest and become non-forfeitable in equal annual installments over three years, beginning on the third (3rd) anniversary of the grant date, subject to the director’s continued service on the Board on such date.
- Re-Election Equity Grant: The greater of (i) a number of shares of restricted stock having a fair market value on the grant date of $50,000, or (ii) 200 shares of restricted stock, which shares shall vest and become non-forfeitable on the third (3rd) anniversary of the grant date, subject to the director’s continued service on the Board on such date.

In addition, each non-employee director receives reimbursement for reasonable travel expenses incurred in attending meetings of our Board and meetings of committees of our Board.

Director Compensation Table

The following table sets forth the cash and other compensation we paid to the non-employee members of our Board for all services in all capacities during 2024.

Name	Fees Earned or Paid in Cash ($)[1]	Stock Awards ($)[2]	Total ($)
Michael S. Weiss[3]	$ 60,000	$ —	$ 60,000
Adam J. Chill	60,000	—	60,000
Neil Herskowitz	50,000	—	50,000
David Jin[4]	12,500	—	12,500
Lindsay A. Rosenwald, M.D.	50,000	—	50,000
Michael J. Zelefsky, M.D.	50,000	—	50,000

(1) Represents the cash retainer for serving on our Board and committees thereof.

(2) No stock awards were granted in 2024. As of December 31, 2024, each of Mr. Herskowitz, Dr. Rosenwald, Mr. Weiss, Mr. Chill and Dr. Zelefsky had 239 shares of unvested restricted stock pursuant to prior awards.

(3) Pursuant to the Advisory Agreement, the Advisor is paid an annual cash fee of $60,000, for the services of Mr. Weiss as Chairman of the Board and Executive Chairman in addition to any and all annual equity incentive grants paid to members of the Board.

(4) Mr. Jin was appointed to our Board on October 23, 2024. The amounts shown represent a prorated amounts of fees earned by Mr. Jin under our director compensation program.

DELINQUENT SECTION 16(a) REPORTS

Section 16(a) of the Exchange Act requires our directors, certain officers, and beneficial owners of more than ten percent of our common stock to file reports with the SEC indicating their holdings of and transactions in our equity securities, and to provide copies of such reports to us. Based solely on a review of our records, publicly available information, and written representations by the persons required to file such reports, we believe that during the fiscal year ended December 31, 2024, the following Section 16(a) filings were untimely due to administrative error: one Form 4, filed on June 4, 2024, for Dr. Litchman (covering a total of two transactions).

RELATED-PERSON TRANSACTIONS

Except as set forth below, since January 1, 2023, we have not been a party to any transaction in which the amount involved exceeded or will exceed $120,000, and in which any of our directors, NEOs, or beneficial owners of more than 5% of our capital stock, or an affiliate or immediate family member thereof, had or will have a direct or indirect material interest, and other than compensation, termination, and change-in-control arrangements.

The written charter of the Audit Committee authorizes, and Nasdaq rules require, the Audit Committee to review and approve related-party transactions. In reviewing related-party transactions, the Audit Committee applies the basic standard that transactions with affiliates should be made on terms no less favorable to us than could have been obtained from unaffiliated parties. Therefore, the Audit Committee reviews the benefits of the transactions, terms of the transactions and the terms available from unrelated third parties, as applicable. All transactions other than compensatory arrangements between us and our officers, directors, principal stockholders and their affiliates will be approved by the Audit Committee or a majority of the disinterested directors and will continue to be on terms no less favorable to us than could be obtained from unaffiliated third parties.

The following is a summary of each transaction or series of similar transactions since our inception to which we were or are a party and that:

- the amount involved exceeded or exceeds $120,000 or is greater than 1% of our total assets; and
- any of our directors or executive officers, any holder of 5% of our capital stock or any member of their immediate family had or will have a direct or indirect material interest.

Founders Agreement and Management Services Agreement with Fortress

Effective March 13, 2015, we entered into a Founders Agreement with Fortress, which was amended and restated on May 17, 2016, and again on July 26, 2016 (the “Mustang Founders Agreement”). The Mustang Founders Agreement provides that, in exchange for the time and capital expended in the formation of our company and the identification of specific assets, the acquisition of which result in the formation of a viable emerging growth life science company, Fortress loaned $2.0 million, representing the up-front fee required to acquire our license agreement with COH. The Mustang Founders Agreement has a term of 15 years, which upon expiration automatically renews for successive one-year periods unless terminated by Fortress and the Company or a Change in Control (as defined in the Mustang Founders Agreement) occurs. Concurrently with the second amendment on July 26, 2016, to the Mustang Founders Agreement, Fortress entered into an Exchange Agreement whereby Fortress exchanged its 7.25 million Class B Common shares for 9,333 common shares and 250,000 Class A Preferred shares. Class A Preferred Stock is identical to common stock other than as to voting rights, conversion rights and the Annual Stock Dividend right (as described below). Each share of Class A Preferred Stock is entitled to vote 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 shares of our outstanding common stock and (B) the whole shares of our common stock into which the shares of outstanding Class A common stock and Class A Preferred Stock are convertible and the denominator of which is the 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 Fortress’ option, into one fully paid and nonassessable share of our common stock, subject to certain adjustments. As holders of Class A Preferred Stock, Fortress will receive on each January 1 (each a “Annual Stock Dividend Payment Date”) until the date all outstanding Class A Preferred Stock is converted into common stock, pro rata per share dividends paid in additional fully paid and nonassessable shares of common stock (“Annual Stock Dividends”) such that the aggregate number of shares of common stock issued pursuant to such Annual Stock Dividend is equal to two and one-half percent (2.5%) of our fully-diluted outstanding capitalization on the date that is one (1) business day prior to any Annual Stock Dividend Payment Date.

As additional consideration under the Mustang Founders Agreement, we are required to: (i) pay an equity fee in shares of common stock, payable within five (5) business days of the closing of any equity or debt financing that occurs after the effective date of the Mustang Founders Agreement and ending on the date when Fortress no longer has majority voting control in our voting equity, equal to two and one-half (2.5%) of the gross amount of any such equity or debt financing; and (ii) pay a cash fee equal to four and one-half percent (4.5%) of our annual net sales, payable on an annual basis, within ninety (90) days of the end of each calendar year. In the event of a Change in Control, we will pay a one-time change in control fee equal to five (5x) times the product of (A) net sales for the twelve (12) months immediately preceding the change in control and (B) four and one-half percent (4.5%).

Effective as of March 13, 2015, we entered into a Management Services Agreement (the "MSA") with Fortress, pursuant to which Fortress renders advisory and consulting services to us. The MSA has an initial term of five years and is automatically renewed for successive five-year terms unless terminated in accordance with its provisions. Services provided under the MSA may include, without limitation, (i) advice and assistance concerning any and all aspects of our operations, clinical trials, financial planning and strategic transactions and financings and (ii) conducting relations on our behalf with accountants, attorneys, financial advisors and other professionals (collectively, the "Services"). We are obligated to utilize clinical research services, medical education, communication and marketing services and investor relations/public relation services of companies or individuals designated by Fortress, provided those services are offered at market prices.

However, we are not obligated to take or act upon any advice rendered from Fortress and Fortress shall not be liable for any of its actions or inactions based upon their advice. Pursuant to the MSA and our Certificate of Incorporation, Fortress and its affiliates, including all members of our Board, will have no fiduciary or other duty to communicate or present any corporate opportunities to us or to refrain from engaging in business that is similar to that of our company. In consideration for the Services, we pay Fortress an annual consulting fee of $0.5 million (the "Annual Consulting Fee"), payable in advance in equal quarterly installments on the first business day of each calendar quarter in each year, provided, however, that such Annual Consulting Fee shall be increased to $1.0 million for each calendar year in which we have net assets in excess of $100 million at the beginning of the calendar year. We record fifty percent of the Annual Consulting Fee in research and development expense and fifty percent in general and administrative expense in the Statement of Operations. For the years ended December 31, 2024 and 2023, we recorded expense of $0.5 million and $0.5 million, respectively, related to this agreement.

For the year ended December 31, 2024, we issued 23,450 shares of common stock to Fortress, which equaled 2.5% of the gross proceeds of $2.6 million from the sale of shares of common stock under our At-the-Market Offering and $4.0 million gross proceeds from the May 2024 Public Offering, $2.5 million from the June 2024 PIPE, and $4.0 million from the October 2024 warrant exercise. We recorded expense of approximately $0.3 million in general and administrative expenses related to these shares for the year ended December 31, 2024.

For the year ended December 31, 2023, we issued zero shares of common stock and recorded 1,319 shares issuable to Fortress, which equaled 2.5% of the gross proceeds of $0.2 million from the sale of shares of common stock under our At-the-Market Offering and $4.4 million gross proceeds on the Registered Direct Offering. We recorded an expense of approximately $0.1 million in general and administrative expenses related to these shares for the year ended December 31, 2023.

Payables and Accrued Expenses Related Party

In the normal course of business, Fortress pays for certain expenses on our behalf. Such expenses are recorded as Payables and accrued expenses - related party.

Director Compensation

Dr. Rosenwald and Mr. Jin

Pursuant to the terms of our Non-Employee Directors Compensation Plan, Dr. Rosenwald and Mr. Jin will receive a cash fee of $50,000 per year paid quarterly and an annual stock award of the greater of (i) a number of shares of common stock having a fair market value on the grant date of $50,000 or (ii) 200 shares of common stock, which shares shall vest and become non-forfeitable on the third anniversary of the grant date, subject to their continued service on the Board on such date. Dr. Rosenwald is Chairman, President and Chief Executive Officer of Fortress and Mr. Jin is Chief Financial Officer and Head of Corporate Development of Fortress. We are a controlled subsidiary of Fortress.

For the year ended December 31, 2024, we recognized $50,000 and $12,500 for Dr. Rosenwald and Mr. Jin, respectively, in expense related to the director compensation. For the year ended December 31, 2023, we recognized $100,000 in expense in our Statements of Operations related to the director compensation, including approximately $50,000 in expense related to equity incentive grants. We issued Dr. Rosenwald 144 restricted stock awards for the year ended December 31, 2023. No restricted stock awards were granted in 2024. We recognized $12,500 in expense in our Statements of Operations related to director compensation for Mr. Jin. We intend to grant Mr. Jin his Initial Equity Grant and subsequent Re-Election Equity Grants following the 2025 Annual Meeting.

Mr. Weiss - Advisory Agreement with Caribe BioAdvisors, LLC

The Board approved and authorized our entrance into an advisory agreement, dated January 1, 2017 (the "Advisory Agreement"), with Caribe BioAdvisors, LLC (the "Advisor"), owned by Michael S. Weiss, the Chairman of the Board, to provide the board advisory services of Mr. Weiss as Chairman of the Board. Pursuant to the Advisory Agreement, the Advisor will be paid an annual cash fee of $60,000, paid quarterly and an annual stock award of the greater of (i) a number of shares of common stock having a fair market value on the grant date of $50,000 or (ii) 200 shares of common stock, which shares shall vest and become non-forfeitable on the third anniversary of the grant date, subject to continued service on the Board on such date.

For the year ended December 31, 2024, we recognized $60,000 in expense related to the Advisory Agreement. For the year ended December 31, 2023, we recognized $110,000 in expense in our Statements of Operations related to the Advisory Agreement, including approximately $50,000 in expense related to equity incentive grants. We issued Mr. Weiss 144 shares of restricted stock for the year ended December 31, 2023. No restricted stock awards were granted in 2024.

STOCK OWNERSHIP OF OUR DIRECTORS, EXECUTIVE OFFICERS, AND 5% BENEFICIAL OWNERS

The following table shows information, as of November 18, 2025, concerning the beneficial ownership of our common stock by:

- each person we know to be the beneficial owner of more than 5% of our common stock;
- each of our current directors;
- each of our NEOs shown in our Summary Compensation Table; and
- all current directors and NEOs as a group.

As of November 18, 2025, there were 6,453,701 shares of our common stock, 845,385 shares of our Class A common stock, and 250,000 shares of our Class A Preferred Stock outstanding. In order to calculate a stockholder's percentage of beneficial ownership, we include in the calculation those shares underlying options or warrants beneficially owned by that stockholder that are vested or that will vest within 60 days of November 18, 2025. Shares of restricted stock are deemed to be outstanding. Options or warrants held by other stockholders that are not attributed to the named beneficial owner are disregarded in this calculation. Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to the shares of our common stock. Unless we have indicated otherwise, each person named in the table below has sole voting power and investment power for the shares listed opposite such person's name, except to the extent authority is shared by spouses under community property laws.

Name of Beneficial Owner(1)	Shares Owned	Shares Under Exercisable Options and Unvested Restricted Stock Units (2)	Total Shares Beneficially Owned	% of Total Common Stock
Michael S. Weiss (3)	991	—	991	* %
Manuel Litchman, M.D	1,563	939	2,502	* %
Lindsay A. Rosenwald, M.D (3)	1,008	—	1,008	* %
Neil Herskowitz	392	—	392	* %
David Jin	39	—	39	* %
Adam J. Chill	379	—	379	* %
Michael J. Zelefsky, M.D	379	—	379	* %
All current executive officers and directors as a group (7 persons)	4,751	939	5,690	* %
5% or Greater Stockholders:				
Fortress Biotech, Inc. (4)	258,192	—	258,192	4.0 %

* Less than 1% of our common stock outstanding

(1) The address of each of the directors and executive officers is c/o Mustang Bio, Inc., 95 Sawyer Road, Suite 110, Waltham, Massachusetts 02453, and the address of Fortress Biotech, Inc. is c/o Fortress Biotech, Inc., 1111 Kane Concourse, Suite 301, Bay Harbor Islands, FL 33154.

(2) Includes only options exercisable within 60 days of November 18, 2025 and unvested restricted stock units.

(3) Includes 666 warrants issued by Fortress to each of Mr. Weiss and Dr. Rosenwald that cover shares of our common stock that are owned by Fortress. These do not represent equity compensation by us to either Mr. Weiss or Dr. Rosenwald.

(4) Includes shares underlying 666 warrants issued to each of Mr. Weiss and Dr. Rosenwald, and excludes 250,000 of Class A Preferred Stock, which are convertible into 333 shares of Common Stock.

The following table shows information, as of November 18, 2025, concerning the beneficial ownership of our Class A Common Stock:

	Class A Common Stock Beneficially Owned	
Name and Address of Beneficial Owner[(1)]	**Number of Shares and Nature of Beneficial Ownership[(2)]**	**Percentage of Total Class A Common Stock**
City of Hope	845,385	100 %

(1) The address City of Hope is 1500 East Duarte Road, Duarte, California 91010.
(2) Converts into 1,127 shares of common stock.

The following table shows information, as of November 18, 2025, concerning the beneficial ownership of our Class A Preferred Stock:

	Class A Preferred Stock Beneficially Owned	
Name and Address of Beneficial Owner[(1)]	**Number of Shares and Nature of Beneficial Ownership[(2)]**	**Percentage of Total Class A Preferred Stock**
Fortress Biotech, Inc.	250,000	100 %

(1) The address of Fortress Biotech, Inc. is c/o Fortress Biotech, Inc., 1111 Kane Concourse Suite 301 Bay Harbor Islands, FL 33154.
(2) Converts into 333 shares of common stock.

PROPOSAL ONE: ELECTION OF DIRECTORS; NOMINEES

Our Bylaws provide that the Board shall consist of not more than nine nor less than one member, as determined from time to time by resolution of the Board. Our Board currently consists of seven members. The nominated directors are: Manuel Litchman, M.D., Michael S. Weiss, Adam J. Chill, Neil Herskowitz, David Jin, Lindsay A. Rosenwald, M.D., and Michael J. Zelefsky, M.D. For information about each of the nominees and our Board generally, please see "*Corporate Governance - Current Directors/Nominees*" beginning on page 6. If elected, the nominees will hold office until the next annual meeting and until a respective successor is elected and has been qualified, or until such director resigns or is removed from office. Management expects that each of the nominees will be available for election, but if any of them is unable to serve at the time the election occurs, your proxy will be voted for the election of another nominee to be designated by a majority of the independent directors serving on our Board.

THE BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" THE ELECTION OF ALL OF THE NOMINEES FOR DIRECTOR. IF A CHOICE IS SPECIFIED ON THE PROXY BY THE STOCKHOLDER, THE SHARES WILL BE VOTED AS SPECIFIED. IF NO SPECIFICATION IS MADE, THE SHARES WILL BE VOTED "FOR" ALL OF THE NOMINEES. THE AFFIRMATIVE VOTE OF THE HOLDERS OF A PLURALITY OF THE SHARES REPRESENTED AND ENTITLED TO VOTE AT THE ANNUAL MEETING AT WHICH A QUORUM IS PRESENT IS REQUIRED FOR THE ELECTION OF THE NOMINEES.

PROPOSAL TWO: RATIFICATION OF APPOINTMENT OF KPMG LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board is submitting the selection of KPMG LLP as our independent registered public accounting firm to the stockholders for ratification at our Annual Meeting. Stockholder ratification of our independent registered public accounting firm is not required by our Bylaws or otherwise. If KPMG LLP is not ratified as our independent registered public accounting firm by a majority of the shares present or represented by proxy, the Board will review its future selection of its independent registered public accounting firm. KPMG LLP will still serve as our independent registered public accounting firm for the year ending December 31, 2025, if it is not ratified by our stockholders.

THE BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" RATIFICATION OF THE APPOINTMENT OF KPMG LLP AS THE COMPANY'S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE YEAR ENDING DECEMBER 31, 2025. THE AFFIRMATIVE VOTE OF THE MAJORITY OF SHARES PRESENT VIRTUALLY OR REPRESENTED BY PROXY AT THE MEETING AND ENTITLED TO VOTE ON THE SUBJECT MATTER IS REQUIRED FOR APPROVAL.

PROPOSAL THREE: AMENDMENT TO THE COMPANY'S 2019 EMPLOYEE STOCK PURCHASE PLAN TO INCREASE THE NUMBER OF SHARES AVAILABLE UNDER THE PLAN BY 250,000 SHARES AND INCREASE THE NUMBER OF SHARES SUBJECT TO A PURCHASE RIGHT THEREUNDER TO 10,000

The Board has adopted an amendment (the "ESPP Amendment") to the Mustang Bio, Inc. 2019 Employee Stock Purchase Plan (the "ESPP"), providing for the issuance of up to an additional 250,000 shares of the Company's common stock, $0.0001 par value per share (the "Shares") to eligible employees, including our executive officers, and an increase in the number of shares subject to a Purchase Right thereunder to 10,000, subject to stockholder approval of the ESPP Amendment. We believe that the ESPP Amendment will benefit the Company because providing employees of the Company with an opportunity to purchase Shares should prove helpful in attracting, retaining, and motivating valued employees.

The text of the ESPP Amendment is attached to this proxy statement as Appendix A.

The following is a summary of the material provisions of the ESPP and is qualified in its entirety by reference to the complete text of the ESPP, a copy of which was filed with our proxy statement dated April 30, 2019, as Exhibit A, the Amendment to the ESPP dated June 17, 2021, a copy of which was filed as Exhibit 10.2 to our Current Report on Form 8-K, filed with the SEC on June 22, 2021, and the Amendment to the ESPP dated June 21, 2023, a copy of which was filed as Exhibit 10.1 to our Current Report on Form 8-K, filed with the SEC on June 23, 2023.

General Information

The ESPP is intended to qualify as an "employee stock purchase plan" under Section 423 of the IRC. There are currently 9,333 Shares reserved for issuance under the ESPP. The purpose of the ESPP is to attract, retain and motivate employees of the Company by permitting them to participate in the ownership of the Company. All share figures in this section give effect to the Reverse Stock Split effected on January 15, 2025.

Administration of the Plan

The ESPP is administered by our Board and/or by a committee of our Board having such power as shall be specified by our Board. Generally, each offering of common stock under the ESPP (an "Offering") is for a period of approximately six (6) months duration ("Offering Period"). Our Board may adjust the Offering Periods, subject to certain limitations. The ESPP will continue until terminated by our Board or until all of the Shares reserved for issuance under the ESPP have been issued.

Eligibility

Participation in the ESPP is limited to eligible employees of the Company and any parent or subsidiary corporation of the Company designated by our Board for inclusion in the ESPP (individually, a "Participating Company") who authorize payroll deductions. Payroll deductions may not exceed 10% of compensation. No person who owns Shares or holds options to purchase, or who as a result of participation in the ESPP would own Shares or hold options to purchase, 5% or more of the total combined voting power or value of all classes of stock of the Company is entitled to participate in the ESPP. In addition, employees (1) who customarily work fewer than 20 hours per week or (2) who customarily work not more than five months in any calendar year are not eligible to participate. Once an employee becomes a participant in the ESPP (a "Participant"), the employee will automatically participate in each successive Offering until such time as the employee either ceases to be an eligible employee, withdraws from the ESPP or terminates employment. As of November 30, 2025, approximately 21 total employees, including Fortress, would be eligible to participate in the ESPP.

Generally, Offerings will be six months in duration and will commence on September 1 and end on February 28 (or 29 in the case of a leap year) and then commence on March 1 and end on August 31.

Purchase of and Payment for Securities Offered

Each Offering Period shall consist of one purchase period of approximately six months duration (individually, a "Purchase Period"). On the last day of each Purchase Period (the "Purchase Date"), Shares are purchased based on accumulated payroll deductions. The purchase price per share at which the Shares are sold under the ESPP generally will be 85% of the lesser of the fair market value of the Shares on the first day of the Offering or the Purchase Date.

The number of Shares a Participant purchases in each Offering is determined by dividing the total amount of payroll deductions withheld from the Participant's compensation by the purchase price. As of the date of this Proxy Statement, subject to certain limitations, during an Offering each Participant has a "Purchase Right" consisting of the right to purchase the lesser of (i) the whole number of Shares determined by dividing $25,000 by the fair market value of a Share on the first day of the Offering and (ii) 100 Shares. Following implementation of the ESPP Amendment, the Purchase Right will be increased to 10,000 Shares. However, Participants may not purchase Shares under the ESPP or any other employee stock purchase plan under Section 423 of the IRC having a fair market value exceeding $25,000 (as determined for purposes of the IRC as of the Offering date for each Offering) in any calendar year in which such Participant's Purchase Right with respect to such Offering remains outstanding. Any cash balance remaining in the Participant's account is refunded to the Participant as soon as practicable after the Purchase Date. If the refund is less than the amount necessary to purchase a whole Share, the Company may maintain the cash in the Participant's account and apply it toward the purchase of Shares in the subsequent Purchase Period or Offering.

A Participant may withdraw from an Offering at any time without affecting his or her eligibility to participate in future Offerings. In effect therefore, a Participant is given an option which he or she may or may not exercise at the end of a Purchase Period. However, once a Participant withdraws from an Offering, that Participant may not again participate in the same Offering.

In the event of a Transfer of Control of the Company (as defined in the ESPP), the Board, in its sole discretion, may arrange with the surviving, continuing, successor, or purchasing corporation or parent corporation thereof (the "Acquiring Corporation") to assume the Company's rights and obligations under the ESPP. Purchase Rights which are neither assumed by the Acquiring Corporation nor exercised as of the Transfer of Control terminate as of the date of the Transfer of Control.

The Board may amend or terminate the ESPP but may not affect Purchase Rights previously granted under the ESPP or adversely affect the right of any Participant except as permitted by the ESPP, as necessary to qualify the ESPP as an employee stock purchase plan pursuant to Section 423 of the IRC or to obtain qualification or registration of the Shares under applicable foreign, federal or state securities laws. The stockholders must approve any amendment changing the number of Shares reserved under the ESPP or changing the definition of the employees (or class of employees) eligible for participation in the ESPP or the definition of a corporation that may be designated by the Board as a Participating Company within 12 months of the adoption of such amendment.

Federal Income Tax Consequences

The following summary is intended only as a general guide as to the United States federal income tax consequences under current law of participation in the ESPP and does not attempt to describe all possible federal or other tax consequences of such participation. Furthermore, the tax consequences are complex and subject to change, and a taxpayer's particular situation may be such that some variation of the described rules is applicable. This summary assumes that the exercise of a Purchase Right under the ESPP constitutes an exercise pursuant to an "employee stock purchase plan" under Section 423 of the IRC.

Purchase Rights

Generally, there are no tax consequences to an employee of either becoming a Participant in the ESPP or purchasing Shares under the ESPP. The tax consequences of a disposition of Shares vary depending on the period such stock is held before its disposition. If a Participant disposes of Shares within two years of the Offering Date or within one year after the Purchase Date on which the Shares are acquired (a "Disqualifying Disposition"), the Participant recognizes ordinary income in the year of disposition in an amount equal to the excess (if any) of the fair market value of the Shares on the Purchase Date (determined without regard to securities law restrictions) over the purchase price. Any additional gain or resulting loss recognized by the Participant from the disposition of the Shares is a capital gain or loss.

If the Participant disposes of Shares more than two years after the Offering Date or more than one year after the Purchase Date on which the Shares are acquired, or dies while holding Shares (whether or not within such periods) the Participant recognizes ordinary income in the year of disposition or death in an amount equal to the lesser of (1) the excess of the fair market value of the Shares on the date of disposition or death over the purchase price or (2) the excess of the fair market value of the Shares on the Offering Date over the purchase price. For this purpose, if the purchase price cannot be determined at the date of the Offering Date, then the purchase price is determined as though the option were exercised when granted. Any additional gain recognized by the Participant on the disposition of the Shares is a capital gain. If the Participant disposes of the Shares in a Disqualifying Disposition, the Company is entitled to a deduction equal to the amount of ordinary income recognized by the Participant as a result, subject to any applicable limitations under Section 162(m) of the IRC. In all other cases, no deduction is allowed the Company.

Adjustments Upon Changes in Capitalization and Other Events

In the event of changes in the common stock of the Company due to a stock split, reverse stock split, stock dividend, recapitalization, combination, reclassification, or like change in the Company's capitalization, or in the event of any merger (including a merger effected for the purpose of changing the Company's domicile), sale or other reorganization, appropriate adjustments shall be made by the Company in the securities subject to purchase under a Purchase Right, the ESPP's Share reserve, the number of Shares subject to a Purchase Right, and in the purchase price per Share.

Restrictions on Resale of Stock

Employees who are executive officers or directors of the Company are subject to the reporting and "short swing" profits liability provisions of Section 16 of the Exchange Act. Such provisions may restrict resale of the Company's common stock purchased under the ESPP. In addition, shares so received by a person deemed an "affiliate" of the Company under the Securities Act must be registered for resale by such person unless such resale complies with the provisions of Rule 144 under the Securities Act. Rule 405 under the Securities Act defines "affiliate" as "a person that directly or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with" the Company. The foregoing is not intended to be a complete statement of applicable law, and employees should rely on their own legal counsel.

THE BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" THE APPROVAL OF THE ESPP AMENDMENT. THE AFFIRMATIVE VOTE OF THE MAJORITY OF SHARES PRESENT VIRTUALLY OR REPRESENTED BY PROXY AT THE MEETING AND ENTITLED TO VOTE ON THE SUBJECT MATTER IS REQUIRED FOR APPROVAL.

PROPOSAL FOUR: AMENDMENT TO THE COMPANY'S 2016 INCENTIVE PLAN TO INCREASE THE NUMBER OF SHARES ISSUABLE BY 2,500,000 SHARES

Introduction

We are asking our stockholders to approve an amendment (the "EIP Amendment") to the Mustang Bio, Inc. 2016 Incentive Plan (the "EIP"). The EIP is the only plan under which equity-based compensation may currently be awarded to our executive officers and employees. In order to enable us to continue to offer meaningful equity-based incentives, as well as cash-based incentives, to our employees, officers, directors and consultants, our Board believes that it is both necessary and appropriate to increase the number of shares of our common stock available for these purposes. As a result, on November 17, 2025, the Board adopted, subject to stockholder approval at the Annual Meeting, an amendment to add 2,500,000 shares to the EIP. The text of the EIP Amendment is attached to this proxy statement as Appendix B.

If the EIP Amendment is approved by our stockholders at the Annual Meeting, it will become effective on the date of the Annual Meeting. If the EIP Amendment is not approved by our stockholders, then the EIP will remain in effect as it presently exists.

Background and Number of Shares Requested

In setting the number of proposed shares issuable under the EIP, the Board considered a number of factors, including historical share usage and future share needs. The following are several factors that you should consider in evaluating the proposal to increase the share reserve under the EIP:

- The EIP currently includes authorization for 14,666 shares of common stock. As of November 28, 2025, there were 6,958 shares of our common stock remaining available for the grant of equity awards under the EIP. The additional 2,500,000 shares requested under the EIP, together with the remaining shares under the EIP, represent the shares the Company anticipates needing for the next year under normal circumstances.

- Although we must manage our share reserve under the possibility that performance awards will be earned at the maximum level, this will only occur if we achieve the maximum performance under each metric in each award, which is not expected to be the case. Our actual share usage will also vary from our estimate based upon changes in market grant values, changes in the number of recipients, changes in our stock price, changes in the structure of our long-term incentive program, changes in our dividend rate and forfeitures of outstanding awards. We believe that the proposed share reserve reflects an appropriate balance between our desire to allow maximum flexibility in a competitive labor market and stockholder interests of limiting dilution.

- Our Amended and Restated Certificate of Incorporation currently authorizes the issuance of (i) 200,000,000 shares of Common Stock, with $0.0001 par value, of which 1,000,000 shares are designated as "Class A Common Stock" and the remainder are undesignated Common Stock, and (ii) 2,000,000 shares of Preferred Stock, 250,000 of which are designated as Class A Preferred Stock and the remainder are undesignated Preferred Stock. As of November 28, 2025 there were 6,453,701 shares of common stock and 845,385 shares of Class A common stock issued and outstanding, and the closing price of a share of our common stock on that date was $1.41.

Summary of the EIP

The material terms of the EIP are described below. The following summary is qualified in its entirety by reference to the complete text of the EIP, a copy of which was filed as Exhibit 10.8 to our Form 10-12G, filed with the SEC on July 28, 2016; Amendment No. 1 to the EIP dated June 14, 2018, a copy of which was attached as Exhibit A to our definitive proxy statement, filed with the SEC on April 30, 2018; Amendment No. 2 to the EIP dated June 17, 2021, a copy of which was filed as Exhibit 10.1 to our Current Report on Form 8-K, filed with the SEC on June 22, 2021; and Amendment No. 3 to the EIP dated June 21, 2022, a copy of which was filed as Exhibit 10.1 to our Current Report on Form 8-K, filed with the SEC on June 24, 2022.

Purpose. The purpose of the EIP is to promote the success, and enhance the value, of Mustang Bio, Inc. by linking the personal interests of employees, officers, directors and consultants of the Company or any its Affiliates (defined below) to those of Company stockholders and by providing such persons with an incentive for outstanding performance. The EIP is further intended to provide flexibility to the Company in its ability to motivate, attract, and retain the services of employees, officers, directors and consultants upon whose judgment, interest, and special effort the successful conduct of the Company's operation is largely dependent. Accordingly, the EIP permits the grant of incentive awards from time to time to selected employees, officers, directors and consultants of the Company and its Affiliates. "Affiliate" means (i) any Subsidiary or Parent, or (ii) an entity that directly or through one or more intermediaries controls, is controlled by or is under common control with, the Company, as determined by the Committee.

Permissible Awards. The EIP authorizes the Board (or the Compensation Committee) to grant awards in any of the following forms:

- options to purchase shares of our common stock, which may be nonstatutory stock options or incentive stock options under the IRC. The exercise price of an option granted under the EIP may not be less than the fair market value of our common stock on the date of grant. Stock options granted to U.S. participants under the EIP may not have a term longer than ten (10) years;
- stock appreciation rights, or SARs, which give the holder the right to receive the excess, if any, of the fair market value of one (1) share of our common stock on the date of exercise, over the base price of the stock appreciation right. The base price of a SAR may not be less than the fair market value of our common stock on the date of grant. SARs granted to U.S. participants under the EIP may not have a term longer than ten (10) years;
- restricted stock, which is subject to restrictions on transferability and subject to forfeiture on terms set by the Compensation Committee;
- restricted stock units, which represent the right to receive shares of our common stock (or an equivalent value in cash or other property) in the future, based upon the attainment of stated vesting or performance goals set by the Compensation Committee;
- deferred stock units, which represent the right to receive shares of our common stock (or an equivalent value in cash or other property) in the future, generally without any vesting or performance restrictions;
- performance awards, which may be stock-based or cash-based Awards with performance-based vesting criteria, on such terms and conditions as may be selected by the Committee;
- other stock-based awards in the discretion of the Compensation Committee, including unrestricted stock grants; and
- cash-based awards in the discretion of the Compensation Committee, including cash-based performance awards.

All awards will be evidenced by a written award certificate between us and the participant, which will include such provisions as may be specified by the Compensation Committee or the independent members of our Board. Dividend equivalent rights, which entitle the participant to payments in cash or property calculated by reference to the amount of dividends paid on the shares of stock underlying an award, may be granted with respect to awards other than options or SARs.

Awards to Non-Employee Directors. Awards granted under the EIP to our non-employee directors will be made only in accordance with the terms, conditions and parameters of a plan, program or policy for the compensation of non-employee directors as in effect from time to time. The Compensation Committee may not make discretionary grants under the EIP to non-employee directors. The maximum aggregate number of shares associated with any award granted under the EIP in any calendar year to any one non-employee director is 100,000.

Shares Available for Awards; Adjustments. Subject to adjustment as provided in the EIP, the aggregate number of shares of our common stock reserved and available for issuance pursuant to awards granted under the EIP is 14,666. Shares subject to awards that are canceled, terminated, forfeited, settled in cash, withheld to satisfy exercise prices or tax withholding obligations or otherwise not issued for any reason, including by reason of failure to achieve maximum performance goals, will again be available for awards under the EIP. In the event of a nonreciprocal transaction between us and our stockholders that causes the per share value of our common stock to change (including, without limitation, any stock dividend, stock split, spin-off, rights offering, or large nonrecurring cash dividend), the share authorization limits under the EIP will be adjusted proportionately, and the Compensation Committee must make such adjustments to the EIP and awards as it deems necessary, in its sole discretion, to prevent dilution or enlargement of rights immediately resulting from such transaction.

Administration. The EIP is administered by the Compensation Committee or, at the discretion of the Board from time to time, the EIP may be administered by the Board. It is intended that at least two of the directors appointed to serve on the Committee shall be Independent Directors and that any members of the Committee who do not so qualify shall abstain from participating in any decision to make or administer Awards that are made to Eligible Participants who at the time of consideration for such Award are persons subject to the short-swing profit rules of Section 16 of the 1934 Act. However, the mere fact that a Committee member shall fail to qualify as an Independent Director or shall fail to abstain from such action shall not invalidate any Award made by the Committee which Award is otherwise validly made under the EIP. The members of the Committee shall be appointed by, and may be changed at any time and from time to time in the discretion of, the Board. Unless and until changed by the Board, the Compensation Committee of the Board is designated as the Committee to administer the EIP. The Board may reserve to itself any or all of the authority and responsibility of the Committee under the EIP or may act as administrator of the EIP for any and all purposes. To the extent the Board has reserved any authority and responsibility or during any time that the Board is acting as administrator of the EIP, it shall have all the powers and protections of the Committee hereunder, and any reference herein to the Committee (other than in this Section 4.1) shall include the Board. To the extent any action of the Board under the EIP conflicts with actions taken by the Committee, the actions of the Board shall control.

Limitations on Transfer; Beneficiaries. No right or interest of a Participant in any unexercised or restricted Award may be pledged, encumbered, or hypothecated to or in favor of any party other than the Company or an Affiliate, or shall be subject to any lien, obligation, or liability of such Participant to any other party other than the Company or an Affiliate. No unexercised or restricted Award shall be assignable or transferable by a Participant other than by will or the laws of descent and distribution; provided, however, that Nonstatutory Stock Options may be transferred without consideration to members of a Participant's immediate family ("Immediate Family Members"), to trusts in which such Immediate Family Members have more than fifty percent (50%) of the beneficial interest, to foundations in which such Immediate Family Members (or the Participant) control the management of assets, and to any other entity (including limited partnerships and limited liability companies) in which the Immediate Family Members (or the Participant) own more than fifty percent (50%) of the voting interest; and, provided, further, that the Committee may (but need not) permit other transfers (other than transfers for value) where the Committee concludes that such transferability (i) does not result in accelerated taxation, (ii) does not cause any Option intended to be an Incentive Stock Option to fail to be described in IRC Section 422(b), and (iii) is otherwise appropriate and desirable, taking into account any factors deemed relevant, including without limitation, state or federal tax or securities laws applicable to transferable Awards.

Treatment of Awards upon a Change in Control. Upon the occurrence of a Change in Control: (i) outstanding Options, SARs, and other Awards in the nature of rights that may be exercised shall become fully exercisable, (ii) time-based vesting restrictions on outstanding Awards shall lapse, and (iii) the target payout opportunities attainable under outstanding performance-based Awards shall be deemed to have been fully earned as of the effective date of the Change in Control based upon an assumed achievement of all relevant performance goals at the "target" level, and there shall be a pro rata payout to Participants within sixty (60) days following the Change in Control (unless a later date is required by Section 16.3 hereof), based upon the length of time within the performance period that has elapsed prior to the Change in Control. Any Awards shall thereafter continue or lapse in accordance with the other provisions of the EIP and the Award Certificate. To the extent that this provision causes Incentive Stock Options to exceed the dollar limitation set forth in IRC Section 422(d), the excess Options shall be deemed to be Nonstatutory Stock Options.

Discretionary Acceleration. The Compensation Committee may, in its discretion, accelerate the vesting and/or payment of any awards for any reason, subject to certain limitations under Section 409A of the IRC. The Compensation Committee may discriminate among participants or among awards in exercising such discretion.

Certain Transactions. Upon the occurrence or in anticipation of certain corporate events or extraordinary transactions, the Compensation Committee may also make discretionary adjustments to awards, including settling awards for cash, providing that awards will become fully vested and exercisable, providing for awards to be assumed or substituted, or modifying performance targets or periods for awards.

Termination and Amendment. Unless earlier terminated as provided in the EIP, the EIP will terminate on the tenth (10) anniversary of its adoption, or, if the stockholders approve this proposal three, the tenth (10) anniversary of the date of such approval, unless earlier terminated by our Board or Compensation Committee.

The Board or the Committee may, at any time and from time to time, amend, modify or terminate the EIP without stockholder approval; however, if an amendment to the EIP would, in the reasonable opinion of the Board or the Committee, constitute a material change requiring stockholder approval under applicable laws, policies or regulations or the applicable listing or other requirements of an Exchange, then such amendment shall be subject to stockholder approval; and provided, further, that the Board or Committee may condition any other amendment or modification on the approval of stockholders of the Company for any reason, including by reason of such approval being necessary or deemed advisable (i) to comply with the listing or other requirements of an Exchange, or (ii) to satisfy any other tax, securities or other applicable laws, policies or regulations. Except for any mandatory adjustments to the EIP and Awards required under the EIP, without the prior approval of the stockholders of the Company, the EIP may not be amended to permit: (i) the exercise price or base price of an Option or SAR to be reduced, directly or indirectly, (ii) an Option or SAR to be cancelled in exchange for cash, other Awards, or Options or SARs with an exercise or base price that is less than the exercise price or base price of the original Option or SAR, or otherwise, or (iii) the Company to repurchase an Option or SAR for value (in cash or otherwise) from a Participant if the current Fair Market Value of the Shares underlying the Option or SAR is lower than the exercise price or base price per share of the Option or SAR.

Prohibition on Repricing. As indicated above under “Termination and Amendment,” outstanding stock options and SARs cannot be repriced, directly or indirectly, without the prior consent of our stockholders. The exchange of an “underwater” option or stock appreciation right (i.e., an option or stock appreciation right having an exercise price or base price in excess of the current market value of the underlying stock) for cash or for another award would be considered an indirect repricing and would, therefore, require the prior consent of our stockholders.

Certain Federal Tax Effects

The following discussion is limited to a summary of the U.S. federal income tax provisions relating to the grant, exercise and vesting of awards under the EIP and the subsequent sale of common stock acquired under the EIP. The tax consequences of awards may vary depending upon the particular circumstances, and it should be noted that the income tax laws, regulations and interpretations thereof change frequently. Participants should rely upon their own tax advisors for advice concerning the specific tax consequences applicable to them, including the applicability and effect of state, local, and foreign tax laws.

Nonstatutory Stock Options. There typically will be no federal income tax consequences to the optionee or to us upon the grant of a nonstatutory stock option under the EIP. When the optionee exercises a nonstatutory option, however, he or she will recognize ordinary income in an amount equal to the excess of the fair market value of our common stock received upon exercise of the option at the time of exercise over the exercise price, and we will typically be allowed a corresponding deduction. Any gain that the optionee realizes when he or she later sells or disposes of the option shares will be short-term or long-term capital gain, depending on how long the shares were held.

Incentive Stock Options. There typically will be no federal income tax consequences to the optionee or to us upon the grant or exercise of an incentive stock option. If the optionee holds the option shares for the required holding period of at least two (2) years after the date the option was granted and one (1) year after exercise, the difference between the exercise price and the amount realized upon sale or disposition of the option shares will be long-term capital gain or loss, and we will not be entitled to a federal income tax deduction. If the optionee disposes of the option shares in a sale, exchange, or other Disqualifying Disposition before the required holding period ends, he or she will recognize taxable ordinary income in an amount equal to the excess of the fair market value of the option shares at the time of exercise (or, if less, the amount realized on the disposition of the shares) over the exercise price, and we would typically be allowed a federal income tax deduction equal to such amount. While the exercise of an incentive stock option does not result in current taxable income, the excess of the fair market value of the option shares at the time of exercise over the exercise price will be an item of adjustment for purposes of determining the optionee's alternative minimum taxable income.

Stock Appreciation Rights. A participant receiving a stock appreciation right typically will not recognize income, and we will not be allowed a tax deduction, at the time the award is granted. When the participant exercises the stock appreciation right, the amount of cash and the fair market value of any shares of our common stock received will be ordinary income to the participant and we will typically be allowed as a corresponding federal income tax deduction at that time.

Restricted Stock. Unless a participant makes an election to accelerate recognition of income to the date of grant as described below, the participant will not recognize income, and we will not be allowed a tax deduction, at the time a restricted stock award is granted, provided that the award is subject to restrictions on transfer and is subject to a substantial risk of forfeiture. When the restrictions lapse, the participant will recognize ordinary income equal to the fair market value of our common stock as of that date (less any amount he or she paid for the stock), and we will typically be allowed a corresponding federal income tax deduction at that time, subject to limitations in certain circumstances. If the participant files an election under IRC Section 83(b) within thirty (30) days after the date of grant of the restricted stock, he or she will recognize ordinary income as of the date of grant equal to the fair market value of the stock as of that date (less any amount paid for the stock), and we will typically be allowed a corresponding federal income tax deduction, subject to limitations in certain circumstances at that time. Any future appreciation in the stock will be taxable to the participant at capital gains rates. However, if the stock is later forfeited, the participant will not be able to recover the tax previously paid pursuant to the Section 83(b) election. To the extent unrestricted dividends are paid during the restricted period under the applicable award agreement, any such dividends will be taxable to the participant at ordinary income tax rates and will be deductible by us unless the participant has made a Section 83(b) election, in which case the dividends will thereafter be taxable to the participant as dividends and will not be deductible by us.

Stock Units. A participant typically will not recognize income, and we will not be allowed a tax deduction, at the time a stock unit award is granted. Upon receipt of shares of our common stock (or the equivalent value in cash) in settlement of a stock unit award, a participant will recognize ordinary income equal to the fair market value of our common stock or other property as of that date, and we will typically be allowed a corresponding federal income tax deduction at that time, subject to limitations in certain circumstances.

Cash-Based Performance Awards. A participant will not recognize income, and we will not be allowed a tax deduction, at the time a cash-based performance award is granted (for example, when the performance goals are established). Upon receipt of cash in settlement of the award, the participant will recognize ordinary income equal to the cash received, and we will typically be allowed a corresponding federal income tax deduction at that time, subject to limitations in certain circumstances.

Existing Plan Benefits

Awards under the EIP are at the discretion of the Compensation Committee. Accordingly, future awards under the EIP are not determinable. The table below shows the number of shares issued or subject to awards granted under the EIP through September 30, 2025, to our named executive officers and the other individuals and groups indicated.

Name and Position	Aggregate Number of Shares Subject to Options Granted under the EIP Since Plan Inception (# of Shares)	Aggregate Number of Shares Subject to Restricted Stock or Stock Units Granted under the EIP Since Plan Inception (# of Shares)
Manuel Litchman, M.D.	1,388	505
President, Chief Executive Officer and Interim Chief Financial Officer		
All Executive Officers as a Group	1,388	505
All Employees as a Group (excluding executive officers)	—	3,093
All Non-Employees as a Group	133	536
All Non-Employee Directors as a Group	—	1,787

Securities Authorized for Issuance Under Equity Compensation Plans

The following table contains information about our equity compensation plans as of December 31, 2024.

	Equity Compensation Plan Information		
Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders	1,521	$ 4,297.50	6,946
Equity compensation plans not approved by security holders	—	—	—
Total	1,521	$ 4,297.50	6,946

Our equity compensation plans consist of the EIP and the ESPP, which were approved by our stockholders. We do not have any equity compensation plans or arrangements that have not been approved by our stockholders.

THE BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" THE APPROVAL OF THE EIP AMENDMENT. THE AFFIRMATIVE VOTE OF THE MAJORITY OF SHARES PRESENT VIRTUALLY OR REPRESENTED BY PROXY AT THE MEETING AND ENTITLED TO VOTE ON THE SUBJECT MATTER IS REQUIRED FOR APPROVAL.

ADDITIONAL INFORMATION

Householding of Annual Meeting Materials

Some banks, brokers and other nominee record holders may be participating in the practice of "householding" proxy statements and annual reports. This means that only one copy of the Internet Notice, and, if applicable, a single set of our proxy statement and 2024 Annual Report, may have been sent to multiple stockholders in your household. We will promptly deliver a separate copy of either document to you if you contact us at: Mustang Bio, Inc., 95 Sawyer Road, Suite 110, Waltham, Massachusetts 02453, Attn: Corporate Secretary. You may also contact us at (781) 652-4500.

If you want to receive separate copies of the Internet Notice, or proxy statement and annual report in the future, or if you are receiving multiple copies and would like to receive only one copy for your household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address or phone number.

Stockholder Proposals for Our 2026 Annual Meeting

Only proper proposals under Rule 14a-8 of the Exchange Act which are timely received will be included in the proxy materials for our next annual meeting. In order to be considered timely, such proposal must be received by our Corporate Secretary at 95 Sawyer Road, Suite 110, Waltham, Massachusetts 02453, no later than August 5, 2026, the date that is 120 calendar days prior to the anniversary of the date of this year's proxy statement. We suggest that stockholders submit any stockholder proposal by certified mail, return receipt requested. If a stockholder fails to provide timely notice of a proposal to be included in our proxy materials as described in this paragraph, and such proposal otherwise properly comes before the 2026 Annual Meeting of Stockholders, the proxies designated by our Board will have discretionary authority to vote on any such proposals.

Our Bylaws require stockholders to provide advance notice to the Company of any stockholder director nomination(s) and any other matter a stockholder wishes to present for action at an annual meeting of stockholders (other than matters to be included in our proxy statement, which are discussed in the previous paragraph). In order to properly bring business before an annual meeting, our Bylaws require, among other things, that the stockholder submit written notice thereof complying with our Bylaws to our Corporate Secretary, at the above address, not less than 50 days nor more than 90 days prior to the anniversary of the preceding year's annual meeting. Therefore, the Company must receive notice of a stockholder proposal submitted other than pursuant to Rule 14a-8 (as discussed above) no sooner than September 23, 2026, and no later than November 2, 2026.

In addition to satisfying the foregoing requirements under the Company's Bylaws, to comply with the universal proxy rules, stockholders who intend to solicit proxies in support of director nominees other than the Company's nominees must provide notice that sets forth the information required by Rule 14a-19 under the Exchange Act no later than October 23, 2026.

Other Matters

Our Board does not know of any other matters that may come before the meeting. However, if any other matters are properly presented to the meeting, it is the intention of the person named in the accompanying proxy card to vote, or otherwise act, in accordance with their judgment on such matters.

Solicitation of Proxies

We will bear the cost of solicitation of proxies. In addition to the solicitation of proxies by mail, our officers and employees may solicit proxies in person or by telephone. We may reimburse brokers or persons holding stock in their names, or in the names of their nominees, for their expenses in sending proxies and proxy material to beneficial owners.

Incorporation of Information by Reference

The Audit Committee Report contained in this proxy statement is not deemed filed with the SEC and shall not be deemed incorporated by reference into any prior or future filings made by us under the Securities Act or the Exchange Act, except to the extent that we specifically incorporate such information by reference. Our Annual Report on Form 10-K for the year ended December 31, 2024, delivered to you together with this proxy statement, is hereby incorporated by reference.

APPENDIX A

AMENDMENT NO. 3 TO THE
MUSTANG BIO, INC.
2019 EMPLOYEE STOCK PURCHASE PLAN

This amendment (the "Amendment") to the Mustang Bio, Inc. 2019 Employee Stock Purchase Plan, as amended (the "Plan"), is hereby adopted this __ day of December, 2025, by the Board of Directors (the "Board") of Mustang Bio, Inc. (the "Company").

WITNESETH:

WHEREAS, the Company adopted the Plan for the purposes set forth therein; and

WHEREAS, pursuant to Section 21 of the Plan, the Board has the right to amend the Plan with respect to certain matters, provided that any material increase in the number of Shares available under the Plan shall be subject to stockholder approval; and

WHEREAS, the Board has approved and authorized this Amendment to the Plan and has recommended that the stockholders of the Company approve this Amendment;

NOW, THEREFORE, BE IT RESOLVED, that the Plan is hereby amended, subject to and effective as of the date of stockholder approval hereof, in the following particulars:

1. Section 3 of the Plan is hereby amended by increasing the share references in such section from 9,333 to 259,333, so that such section reads in its entirety as follows:

"3. Share Reserve. The maximum number of shares which may be issued under the Plan shall be 259,333 shares of Mustang's authorized but unissued common stock, $0.0001 par value (the "Shares"). In the event that any Purchase Right for any reason expires or is canceled or terminated, the Shares allocable to the unexercised portion of such Purchase Right may again be subjected to a Purchase Right."

2. Section 7(b) is hereby amended by increasing the Purchase Right from 100 to 10,000 so that such section reads in its entirety as follows:

   "(b) 10,000 Shares."

3. Except as specifically set forth herein, the terms of the Plan shall be and remain unchanged, and the Plan as amended shall remain in full force and effect.

The foregoing is hereby acknowledged as being the Amendment to the Plan, as adopted by the Board on November 17, 2025, and approved by the Company's stockholders on December , 2025.

MUSTANG BIO, INC.

By:
Name: Manuel Litchman, M.D.
Title: President, Chief Executive Officer and Interim Chief Financial Officer

APPENDIX B

FOURTH AMENDMENT TO THE MUSTANG BIO, INC. 2016 INCENTIVE PLAN

This Fourth Amendment to the Mustang Bio, Inc. 2016 Incentive Plan (the "Plan"), is hereby adopted on this __ day of December, 2025, by the Board of Directors (the "Board") of Mustang Bio, Inc. (the "Company").

WITNESETH:

WHEREAS, the Company adopted the Plan for the purposes set forth therein; and

WHEREAS, pursuant to Section 15.1 of the Plan, the Board has the right to amend the Plan with respect to certain matters, provided that any material increase in the number of Shares available under the Plan shall be subject to stockholder approval; and

WHEREAS, the Board has approved and authorized this Fourth Amendment to the Plan and has recommended that the stockholders of the Company approve this Fourth Amendment;

NOW, THEREFORE, BE IT RESOLVED, that the Plan is hereby amended, subject to and effective as of the date of stockholder approval hereof, in the following particulars:

1. Section 5.1 of the Plan is hereby amended by increasing the share references in such section from 14,666 to 2,514,666, so that such section reads in its entirety as follows:

   "5.1. NUMBER OF SHARES. Subject to adjustment as provided in Sections 5.2 and Section 14.1, the aggregate number of Shares reserved and available for issuance pursuant to Awards granted under the Plan shall be 2,514,666. The maximum number of Shares that may be issued upon exercise of Incentive Stock Options granted under the Plan shall be 2,514,666. The maximum aggregate number of Shares associated with any Award granted under the Plan in any calendar year to any one Non-Employee Director shall be 100,000 Shares."

2. Except as specifically set forth herein, the terms of the Plan shall be and remain unchanged, and the Plan as amended shall remain in full force and effect.

The foregoing is hereby acknowledged as being the Fourth Amendment to the Plan, as adopted by the Board on November 17, 2025, and approved by the Company's stockholders on December , 2025.

MUSTANG BIO, INC.

By: -

Name: Manuel Litchman, M.D.
Title: President, Chief Executive Officer and Interim Chief Financial Officer

MUSTANG BIO, INC.
95 SAWYER ROAD, SUITE 110
WALTHAM, MA 02453

SCAN TO VIEW MATERIALS & VOTE

VOTE BY INTERNET
Before The Meeting - Go to **www.proxyvote.com or scan the QR Barcode above**

Use the Internet to transmit your voting instructions and for electronic delivery of information. Vote by 11:59 P.M. ET on December 21, 2025. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

During The Meeting - Go to **www.virtualshareholdermeeting.com/MBIO2025**

You may attend the meeting via the Internet and vote during the meeting. Have the information that is printed in the box marked by the arrow available and follow the instructions.

VOTE BY PHONE - 1-800-690-6903
Use any touch-tone telephone to transmit your voting instructions. Vote by 11:59 P.M. ET on December 21, 2025. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL
Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

V81572-P40333 KEEP THIS PORTION FOR YOUR RECORDS

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED. DETACH AND RETURN THIS PORTION ONLY

MUSTANG BIO, INC.

The Board of Directors recommends you vote FOR the following:

	For All	Withhold All	For All Except
1. Election of Directors	☐	☐	☐

To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.

____

Nominees:

01) Michael S. Weiss
02) Adam J. Chill
03) Neil Herskowitz
04) David Jin
05) Manuel Litchman, M.D.
06) Lindsay A. Rosenwald, M.D.
07) Michael J. Zelefsky, M.D.

The Board of Directors recommends you vote FOR the following proposal:	**For**	**Against**	**Abstain**
2. Ratify the appointment of KPMG LLP as the Company's independent registered public accounting firm for the year ending December 31, 2025.	☐	☐	☐

The Board of Directors recommends you vote FOR the following proposal:	**For**	**Against**	**Abstain**
3. Approve an amendment to the Company's 2019 Employee Stock Purchase Plan, as amended, to increase the number of shares issuable thereunder by 250,000 shares, from 9,333 to 259,333, and increase the number of shares of Common Stock subject to a Purchase Right thereunder to 10,000.	☐	☐	☐

The Board of Directors recommends you vote FOR the following proposal:	**For**	**Against**	**Abstain**
4. Approve an amendment to the Company's 2016 Incentive Plan, as amended, to increase the number of shares issuable by the Company by 2,500,000 shares, from 14,666 to 2,514,666.	☐	☐	☐

NOTE: In their discretion, the proxies are authorized to vote upon such other business as may properly come before the Annual Meeting or any adjournment or postponement thereof. This proxy, when properly executed, will be voted as directed herein by the undersigned stockholder. If no direction is made, the proxy will be voted in accordance with the Board of Directors' recommendations and, accordingly, will be voted FOR each of the Board of Directors' nominees for director specified in proposal 1 and FOR proposals 2, 3 and 4.

Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.

Signature [PLEASE SIGN WITHIN BOX] Date

Signature (Joint Owners) Date

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:
The Notice and Proxy Statement and Annual Report are available at www.proxyvote.com.

V81573-P40333

MUSTANG BIO, INC.
Annual Meeting of Stockholders
December 22, 2025 9:00 AM, EST
This proxy is solicited by the Board of Directors

The stockholder(s) hereby appoint(s) Manuel Litchman, M.D. and Peter Carney, or either of them as proxies, each with the power to appoint his substitute, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of (Common/Preferred) Stock of MUSTANG BIO, INC. that the stockholder(s) is/are entitled to vote at the Annual Meeting of Stockholders to be held at 9:00 AM, EST on Monday, December 22, 2025, virtually at www.virtualshareholdermeeting.com/MBIO2025, and any adjournment or postponement thereof.

This proxy, when properly executed, will be voted in the manner directed herein. If no such direction is made, this proxy will be voted in accordance with the Board of Directors' recommendations.

Continued and to be signed on reverse side