Subject to Completion, Dated June 15, 2023

PRELIMINARY PROSPECTUS SUPPLEMENT

(To Prospectus dated April 6, 2022)

Shares of Common Stock Pre-Funded Warrants to Purchase Shares of Common Stock



We are offering shares of our common stock and, in lieu of offering shares of common stock to certain investors, pre-funded warrants to purchase shares of our common stock. The purchase price of each pre-funded warrant will equal the price per share at which shares of common stock are being sold to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant will equal \$0.001 per share of common stock. This prospectus supplement also relates to the offering of the shares of common stock issuable upon the exercise of such pre-funded warrants.

Our common stock is listed on the Nasdaq Capital Market under the symbol "VSTM." On June 14, 2023, the last reported sale price of our common stock on the Nasdaq Capital Market was \$9.32 per share. There is no established public trading market for the pre-funded warrants, and we do not expect a market to develop. We do not intend to list the pre-funded warrants on the Nasdaq Capital Market or any other national securities exchange or nationally recognized trading system.

Investing in our common stock and pre-funded warrants involves a high degree of risk. Before making an investment decision, you should carefully consider the information under the heading "Risk Factors" beginning on page <u>S-7</u> of this prospectus supplement and under similar headings in the documents incorporated by reference into this prospectus supplement.

	Per Share	Per Pre-funded Warrant	Total
Public offering price	\$	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$	\$
Proceeds to Verastem, Inc., before expenses	\$	\$	\$

(1) See "*Underwriting*" beginning on page <u>S-17</u> of this prospectus supplement for additional information regarding total underwriter compensation.

The underwriters may also exercise their option to purchase up to an additional shares of our common stock from us at the public offering price, less the underwriting discounts and commissions, for 30 days after the date of this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Delivery of the shares of common stock and pre-funded warrants is expected to be made on or about 2023.

Joint Book-Running Managers

RBC Capital Markets

Cantor

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering, including a description of our pre-funded warrants, and certain other matters relating to us and our business. The second part, the accompanying prospectus, contains and incorporates by reference important business and financial information about us, a description of our common stock and certain other information about us and this offering. This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the Securities and Exchange Commission (the "SEC"), using a "shelf" registration process. Both this prospectus supplement and the accompanying prospectus include or incorporate by reference important information about us, our common stock, our pre-funded warrants and other information you should know before investing. You should read both this prospectus supplement and the accompanying prospectus, including all documents incorporated herein and therein by reference, together with the additional information described under "Where You Can Find More Information" herein and in the accompanying prospectus before making an investment decision.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectuses we may provide to you in connection with this offering. We have not, and the underwriters have not, authorized any other person to provide you with any information that is different. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, shares of our common stock and pre-funded warrants only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of the common stock and pre-funded warrants in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of the common stock and pre-funded warrants and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

This prospectus supplement may add to, update or change the information in the accompanying prospectus or the documents incorporated by reference herein. If information in this prospectus supplement is inconsistent with information in the accompanying prospectus or the documents incorporated by reference herein, this prospectus supplement will apply and will supersede that information in the accompanying prospectus or the documents incorporated by reference herein.

References in this prospectus supplement to "Verastem," the "Company," "we," "us," "our" and similar terms refer to Verastem, Inc. and our subsidiaries on a consolidated basis, as appropriate, unless we state otherwise or the context otherwise requires.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information included or incorporated by reference in this prospectus supplement and the accompanying prospectus and does not contain all of the information that may be important to you. You should carefully review this entire prospectus supplement and the accompanying prospectus, including the risk factors and financial statements included and incorporated by reference in this prospectus supplement and the accompanying prospectus.

Company Overview

We are a late-stage development biopharmaceutical company, with an ongoing registration directed trial, committed to advancing new medicines for patients battling cancer. Our pipeline is focused on novel anticancer agents that inhibit critical signaling pathways in cancer that promote cancer cell survival and tumor growth, particularly rapidly accelerated fibrosarcoma ("RAF")/mitogenactivated protein kinase kinase ("MEK") inhibition and focal adhesion kinase ("FAK") inhibition. Our most advanced product candidates, avutometinib and defactinib, are being investigated in both preclinical and clinical studies for the treatment of various solid tumors, including, but not limited to low-grade serous ovarian cancer ("LGSOC"), non-small cell lung cancer, colorectal cancer, pancreatic cancer, and melanoma. We believe that avutometinib may be beneficial as a therapeutic, as a single agent or when used together in combination with defactinib, other agents, other pathway inhibitors, or other current and emerging standard of care treatments in cancers that do not adequately respond to currently available therapies.

Avutometinib (VS-6766) is an orally available first-in-class unique small molecule RAF/MEK clamp. In contrast to other MEK inhibitors that are commercially available and in development, avutometinib is a dual RAF/MEK clamp that blocks MEK kinase activity and induces the formation of dominant negative RAF-MEK complexes preventing phosphorylation of MEK by A-Raf proto-oncogene, serine/threonine kinase, B-Raf proto-oncogene serine/threonine kinase ("BRAF") and C-raf proto-oncogene serine/threonine kinase. MEK-only inhibitors (e.g. trametinib) may have limited efficacy because they induce MEK phosphorylation ("pMEK") by relieving extracellular-signal-regulated-kinase ("ERK")-dependent feedback inhibition of RAF. By inhibiting RAF-mediated phosphorylation of MEK, avutometinib has the advantage of not inducing pMEK. This unique mechanism of avutometinib enables it to inhibit ERK signaling more effectively and may confer enhanced therapeutic activity against mitogen-activated pathway kinase ("MAPK") pathway-driven cancers.

Avutometinib has been shown to inhibit signaling and proliferation of tumor cell lines with a variety of MAPK pathway alterations including Kirsten rat sarcoma viral oncogene homolog ("KRAS"), neuroblastoma rat sarcoma viral oncogene homolog, and BRAF mutations, among others. Avutometinib has demonstrated strong antitumor activity in combination with (i) agents targeting parallel pathways (e.g. inhibitors of FAK, CDK4/6 and mTOR), (ii) agents targeting other nodes in the MAPK pathway (e.g. anti-EGFR, SOS1, KRAS G12C, and KRAS G12D inhibitors), (iii) chemotherapy, and (iv) anti-PD-1.

Defactinib is an oral small molecule inhibitor of FAK and proline-rich tyrosine kinase that is currently being evaluated as a potential combination therapy for various solid tumors. FAK is a non-receptor tyrosine kinase encoded by the protein tyrosine kinase-2 gene that is involved in cellular adhesion and, in cancer, metastatic capability. Defactinib targets malignant cells both directly and through modulation of tumor microenvironment. Defactinib has received orphan drug designation in ovarian cancer in the United States, the European Union, and Australia. Preclinical research by our scientists and collaborators at world-renowned research institutions has described the effect of FAK inhibition as enhancing immune response by decreasing immuno-suppressive cells, increasing cytotoxic T cells and reducing stromal density, which allows tumor-killing immune cells to enter the tumor. Furthermore, it has been shown that FAK activation in response to MAPK inhibitor therapy may bypass MAPK

pathway blockade by driving tumor growth through activation of downstream pathways such as RhoA and YAP, supporting the clinical evaluation of avutometinib in combination with defactinib for treatment of cancers harboring MAPK alterations.

Recent Developments

Data Release

We recently announced updated data from Part A of the ongoing registration-directed RAMP 201 (ENGOTov60/GOG3052) trial evaluating the safety and efficacy of avutometinib (VS-6766) alone and in combination with defactinib among patients with recurrent LGSOC.

In the RAMP 201 study, treatment with the combination of avutometinib and defactinib resulted in an objective response rate (ORR) of 45% (13/29) and tumor shrinkage in 86% (25/29) of evaluable patients. Safety and tolerability continued to be favorable and consistent with previously reported data.

RAMP 201 is an international registration-directed Phase 2 study evaluating the safety and efficacy of avutometinib alone and in combination with defactinib among patients with recurrent LGSOC. The key objectives of Part A (Selection Phase) of the RAMP 201 LGSOC study were to select avutometinib monotherapy or the combination of avutometinib and defactinib as the go forward regimen to be studied in Part B (Expansion Phase) of the study, and to assess efficacy in both KRAS mutant and KRAS wild type LGSOC. These data reinforce the selection of the combination of avutometinib (3.2 mg PO twice weekly 21/28 days) with defactinib (200 mg PO BID 21/28 days) as the go forward regimen regardless of KRAS status, and target enrollment has been achieved in both Part A and Part B.

In Part A of the RAMP 201 trial, 31 patients with recurrent LGSOC were treated with the combination of avutometinib and defactinib, of which 29 were evaluable for efficacy with a minimum follow-up of 12 months and 13 patients remain on study treatment.

Overall, patients were heavily pretreated with a median of 4 prior systemic regimens (up to 11), including prior platinum-based chemotherapy, endocrine therapy and bevacizumab in most patients and prior MEK inhibitor therapy in about 13% of patients. Confirmed objective response rates (ORR) by blinded independent central review of 45% (13/29; 95% CI: 26%-64%) were observed. Tumor shrinkage was observed in the majority of patients, 86% (25/29). Further, 3 out of 4 patients who received prior MEK inhibitors responded to the combination.

Among the patients with KRAS mutant LGSOC, the ORR was 60% (9/15) in the combination arm. Among the patients with KRAS wild type LGSOC, the ORR was 29% (4/14) in the combination arm. The median time to response in the combination arm was 5.5 months (range 1.6-14.7 months). The median duration of response and median progression free survival have not been reached.

The safety profile was consistent with previously reported safety data. The most common treatment-related adverse events for the combination in all treated patients (n=81) were nausea and vomiting, diarrhea, blood creatine phosphokinase (CPK) increased, peripheral edema, vision blurred, dermatitis acneiform and rash, fatigue, dry skin, and anemia, most of which were mild to moderate. The discontinuation rate in the combination arm, due to ≥ 1 adverse event, was 12% in the trial overall to date (4.9% due to elevated blood CPK).

Regulatory Update

The Company plans to include mature data from RAMP 201, the Verastem sponsored clinical trial, and the investigator-sponsored FRAME study to support filing for accelerated approval. The Company is finalizing the design of a randomized confirmatory trial with the FDA, which is planned to begin in the second half of 2023.

Reverse Stock Split

On May 15, 2023, at the 2023 Annual Meeting of Stockholders of the Company, the Company's stockholders approved a proposal to amend the Restated Certificate of Incorporation in accordance with the Certificate of Amendment. On May 30, 2023, the Company filed a Certificate of Amendment to the Company's Restated Certificate of Incorporation, as amended to date, (the "Certificate of Amendment") with the Secretary of State of the State of Delaware to effect a reverse stock split of the Company's issued and outstanding common stock (the "Reverse Stock Split") at a ratio of one-fortwelve. The number of shares of common stock that the Company is authorized to issue remained at 300,000,000 shares. Pursuant to the Certificate of Amendment, the Reverse Stock Split became effective at 5:00 p.m., Eastern Time, on May 31, 2023 (the "Effective Time") and the Company's common stock began trading on a post-split basis under the CUSIP number 92337C 203 upon the opening of trading on June 1, 2023.

As a result of the Reverse Stock Split, every twelve shares of common stock issued and outstanding at the Effective Time converted into one share of common stock. No fractional shares were issued in connection with the Reverse Stock Split. Stockholders who would otherwise be entitled to a fractional share of common stock were entitled to receive a price equal \$12.48 per share, multiplied by the applicable fraction of a share.

Corporate Information

We were incorporated under the laws of the State of Delaware in August 2010. We are
headquartered in Needham, Massachusetts, and our principal offices are located at 117 Kendrick
Street, Suite 500, Needham, Massachusetts and our telephone number is (781) 292-4200.

THE OFFERING

The following summary contains basic information about this offering. The summary is not intended to be complete. You should read the full text and more specific details contained elsewhere in this prospectus supplement and in the documents incorporated by reference herein.

Common stock offered by us

shares of our common stock.

Pre-funded warrants offered by us

We are also offering, in lieu of shares of our common stock to certain investors, pre-funded warrants to purchase shares of our common stock. The purchase price of each prefunded warrant will equal the price per share of our common stock at which the shares of our common stock are being sold to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant will equal \$0.001 per share. Each pre-funded warrant will be exercisable from the date of issuance until fully exercised, subject to an ownership limitation. See "Description of Pre-Funded Warrants." This prospectus supplement also relates to the offering of the shares of our common stock issuable upon the exercise of such pre-funded warrants.

Underwriters' option to purchase additional shares from us

We have granted the underwriters an option for a period of 30 days from the date of this prospectus supplement to purchase up to an additional shares of our common stock from us.

Common stock to be outstanding immediately after this offering

shares (or shares if the underwriters exercise their option to purchase additional shares in full).

Use of proceeds

We intend to use the net proceeds from this offering for continued research and development of our product candidates, potential launch of avutometinib and defactinib in low-grade serious ovarian cancer ("LGSOC"), working capital and other general corporate purposes. See "Use of Proceeds."

Risk factors

Investing in our common stock involves significant risks. See "*Risk Factors*" and under similar headings in the documents incorporated by reference into this prospectus supplement for a discussion of factors you should read and consider before investing in our common stock.

Nasdaq Capital Market symbol

"VSTM." We do not intend to list the pre-funded warrants on the Nasdaq Capital Market or any other national securities exchange or nationally recognized trading system.

The number of shares of our common stock to be outstanding upon completion of this offering is based on 16,736,293 shares of our common stock outstanding as of March 31, 2023, and excludes the following, each as of March 31, 2023:

• 1,976,174 shares of our common stock issuable upon the exercise of stock options outstanding under our Amended and Restated 2012 Incentive Plan, our 2021 Equity Incentive Plan, and our

inducement award program (our "Equity Incentive Plans"), at a weighted average exercise price of \$22.45 per share;

- 160,584 shares of our common stock issuable upon the vesting of restricted stock units under our Equity Incentive Plans;
- 937,177 shares of our common stock reserved and available for future issuance under our 2021 Equity Incentive Plan, of which 54,580 shares are issuable upon the exercise of stock options granted subsequent to March 31, 2023 through the date hereof under the 2021 Equity Incentive Plan at a weighted-average exercise price of \$5.05 per share;
- 129,169 shares of our common stock reserved and available for future issuance under our inducement award program, of which 1,416 shares are issuable upon the exercise of stock options granted subsequent to March 31, 2023 through the date hereof under the inducement award program at a weighted-average exercise price of \$4.68 per share;
- 82,101 shares of our common stock reserved for future issuance under our Amended and Restated 2018 Employee Stock Purchase Plan;
- 833,334 shares of our common stock issuable upon conversion of our outstanding Series A convertible preferred stock, par value \$0.0001 per share (the "Series A Preferred Stock");
- 4,236,570 shares of our common stock issuable upon conversion of our outstanding Series B convertible preferred stock, par value \$0.0001 per share (the "Series B Preferred Stock"); and
- 4,012 shares of our common stock issuable upon conversion of our outstanding 5.00% Convertible Senior Notes due in 2048.

Unless otherwise indicated, all information in this prospectus supplement reflects or assumes the following:

- a one-for-twelve reverse stock split of our issued and outstanding common stock that we
 effected on May 31, 2023;
- no issuance or exercise of stock options or warrants after March 31, 2023;
- no conversions into common stock of our convertible securities after March 31, 2023;
- no exercise of any of the pre-funded warrants to be offered and sold by us in this offering; and
- no exercise by the underwriters of their option to purchase additional shares of common stock in this offering.

In addition, the information in the prospectus supplement assumes no additional issuance of Series B Preferred Stock pursuant to that certain Securities Purchase Agreement (the "Purchase Agreement") dated January 24, 2023 among the Company and the purchasers identified thereto (the "Purchasers") pursuant to which the Company agreed to sell and issue to the Purchasers in a private placement (the "Private Placement") up to 2,144,160 shares of its Series B Preferred Stock in two tranches. The Company agreed to sell and issue to the Purchasers 944,160 shares of Series B Preferred Stock in the second tranche of the Private Placement at a purchase price of \$31.77 per share if at any time within 18 months following the closing of the first tranche the 10-day volume weighted average price of the Company's common stock (as quoted on Nasdaq and as calculated by Bloomberg) should reach at least \$1.125 per share (or \$13.50 when adjusted for the Reverse Stock Split with aggregate trading volume during the same 10-day period of at least \$25.0 million).

RISK FACTORS

An investment in our common stock or our pre-funded warrants involves a high degree of risk, including the risk of a loss of your entire investment. You should carefully consider the following risk factors, as well as the risks described under "Risk Factors" in the accompanying prospectus and our Annual Report on Form 10-K for the year ended December 31, 2022, as well as other information in this prospectus supplement and the documents incorporated by reference herein before deciding whether to invest in our common stock or our pre-funded warrants. See "Where You Can Find More Information." If any such risks actually occur, our business, financial condition or results of operations could be adversely affected. In such case, the trading price of our common stock or our pre-funded warrants could decline and you could lose all or part of your investment. Our actual results could differ materially from those anticipated in the forward-looking statements made throughout this prospectus supplement and in the documents incorporated by reference herein as a result of different factors, including the risks we face described below and in the documents incorporated by reference herein are not the only ones facing us and there may be additional matters that we are unaware of or that we currently consider immaterial.

Risks Related to This Offering

We may allocate the net proceeds from this offering in ways that you and other stockholders may not approve.

We currently intend to use the net proceeds of this offering for continued research and development of our product candidates, potential launch of avutometinib and defactinib in LGSOC, working capital and other general corporate purposes. This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from clinical trials, as well as any collaborations that we may enter into with third parties for our product candidates, and any unforeseen cash needs. Because the number and variability of factors that will determine our use of the proceeds from this offering, their ultimate use may vary substantially from their currently intended use. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering and could spend the proceeds in ways that do not necessarily improve our operating results or enhance the value of our common stock. See "Use of Proceeds."

If you purchase shares of our common stock or pre-funded warrants in this offering, you will suffer immediate dilution of your investment.

Because the price per share of our common stock or the value of our pre-funded warrants being offered is substantially higher than the book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering (or may acquire upon exercise of a pre-funded warrant, as applicable). If you purchase shares of common stock or pre-funded warrants in this offering, you will suffer immediate and substantial dilution of \$ per share with respect to the net tangible book value of the common stock or pre-funded warrants based on public offering price of \$ per share. To the extent the underwriters exercise their option to purchase additional shares in the offering, and to the extent shares are issued under outstanding options, upon conversion of our Series A Preferred Stock, our Series B Preferred Stock or our 5.00% Convertible Senior Notes due in 2048 or further sales are made pursuant to our Sales Agreement with Cantor Fitzgerald & Co., you will incur further dilution. See "Dilution" for a more detailed discussion of the dilution you will incur if you purchase shares of our common stock or our pre-funded warrants in this offering.

Investors in this offering may experience future dilution.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into, or exchangeable for, our common stock at prices that may not be the same as the price per share in this offering. We cannot assure you that we will be able to sell shares of our common stock or other related securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering. If the price per share at which we sell additional shares of our common stock or related securities in future transactions is less than the price per share in this offering, investors who purchase our common stock in this offering will suffer a dilution in their investment.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to decline.

Sales of a substantial number of shares of our common stock in the public market could cause the market price of our common stock to decline. Such sales, or the perception in the market that the holders of a large number of such shares intend to sell, could reduce the market price of our common stock significantly. In connection with this offering, we and our executive officers and directors have entered into lock-up agreements with RBC Capital Markets, LLC and Cantor Fitzgerald & Co., as representatives of the underwriters, that prohibit us and our executive officers and directors, subject to certain specified exceptions or receipt of the prior written consent of RBC Capital Markets, LLC and Cantor Fitzgerald & Co. from offering, selling, contracting to sell, pledging or otherwise disposing of, our common stock or securities convertible into or exchangeable for shares of our common stock for a period of 90 days after the date of this prospectus supplement. However, all of the shares sold in this offering and the remaining shares of our common stock outstanding immediately prior to this offering will not be subject to lock-up agreements with RBC Capital Markets, LLC and Cantor Fitzgerald & Co. and will be freely tradable without restriction. See "Underwriting." If our executive officers or directors sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the market price of our common stock could decline.

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

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

We will not receive any meaningful amount of additional funds upon the exercise of the pre-funded warrants.

Each pre-funded warrant will be exercisable until it is fully exercised and by means of payment of the nominal cash purchase price upon exercise or by means of a "cashless exercise" according to a formula set forth in the pre-funded warrant. Accordingly, we will not receive any meaningful additional funds upon the exercise of the pre-funded warrants.

Except for the right to participate in certain dividends and distributions and as otherwise provided in the prefunded warrants, holders of the pre-funded warrants will have no rights as common stockholders until such holders exercise their pre-funded warrants and acquire shares of our common stock.

Until holders of the pre-funded warrants exercise their pre-funded warrants and acquire shares of our common stock, such holders will have no rights with respect to the shares of our common stock underlying such pre-funded warrants, except for the right to participate in certain dividends and distributions and as otherwise provided in the pre-funded warrants. Upon exercise of the pre-funded

warrants, the holders will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

Significant holders or beneficial holders of shares of our common stock may not be permitted to exercise the pre-funded warrants that they hold.

A holder of the pre-funded warrants will not be entitled to exercise any portion of any pre-funded warrant that, upon giving effect to such exercise, would cause (i) the aggregate number of shares of our common stock beneficially owned by such holder (together with its affiliates and other attribution parties) to exceed 9.99% of the number of shares of our common stock immediately after giving effect to the exercise subject to certain limited adjustments provided for in the pre-funded warrants; or (ii) the combined voting power of our securities beneficially owned by such holder (together with its affiliates) to exceed 9.99% of the combined voting power of all of our securities outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. As a result, a holder may not be able to exercise its pre-funded warrants for shares of our common stock at a time when it would be financially beneficial for the holder to do so. In such a circumstance, the holder could seek to sell its pre-funded warrants to realize value, but the holder may be unable to do so in the absence of an established trading market. See "Description of Pre-Funded Warrants."

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the other documents we have filed with the SEC that are incorporated herein and therein by reference, contain forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements related to present facts or current conditions or historical facts, contained in or incorporated by reference into this prospectus supplement, including statements regarding our strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. Such statements relate to, among other things, the development and activity of our programs and product candidates, avutometinib (RAF/MEK program) and defactinib (FAK program), the structure of our planned and pending clinical trials, and the timeline and indications for clinical development, regulatory submissions and commercialization of activities. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Forward-looking statements are not guarantees of future performance and our actual results could differ materially from the results discussed in the forward-looking statements we make. Applicable risks and uncertainties include the risks and uncertainties, among other things, regarding: the uncertainties inherent in research and development of avutometinib and defactinib, such as negative or unexpected results of clinical trials; whether and when any applications for avutometinib and defactinib may be filed with regulatory authorities in any jurisdictions; whether and when regulatory authorities in any jurisdictions may approve any such other applications that may be filed for avutometinib and defactinib, which will depend on the assessment by such regulatory authorities of the benefit-risk profile suggested by the totality of the efficacy and safety information submitted and, if approved, whether avutometinib or defactinib will be commercially successful in such jurisdictions; our ability to obtain, maintain and enforce patent and other intellectual property protection for avutometinib and defactinib; the scope, timing, and outcome of any legal proceedings; decisions by regulatory authorities regarding labeling and other matters that could affect the availability or commercial potential of avutometinib and defactinib; whether preclinical testing of our product candidates and preliminary or interim data from clinical trials will be predictive of the results or success of ongoing or later clinical trials; that the timing, scope and rate of reimbursement for our product candidates is uncertain; that there may be competitive developments affecting our product candidates; that data may not be available when expected; that enrollment of clinical trials may take longer than expected; that ayutometinib or defactinib will cause unexpected safety events, experience manufacturing or supply interruptions or failures, or result in unmanageable safety profiles as compared to their levels of efficacy; that any of our third party contract research organizations, contract manufacturing organizations, clinical sites, or contractors, among others, who we rely on fail to fully perform; that we face substantial competition, which may result in others developing or commercializing products before or more successfully than we do which could result in reduced market share or market potential for avutometinib or defactinib; that we will be unable to in-license additional compounds or successfully initiate or complete the clinical development and eventual commercialization of our product candidates; that the development and commercialization of our product candidates will take longer or cost more than planned; that we may not have sufficient cash to fund our contemplated operations; that we may not attract and retain high quality personnel, that we or Chugai Pharmaceutical, Co. Ltd., will fail to fully perform under the license agreement; that our target market for our product candidates might be smaller than we are presently estimating; that we or Secura Bio, Inc. will fail to fully perform under the asset purchase agreement; that we may be unable to make additional draws under our debt facility or obtain adequate financing in the future through product licensing, co-promotional arrangements, public or private equity, debt financing or otherwise; that we will not pursue or submit regulatory filings for our product candidates, that our product candidates will not receive regulatory approval, become commercially

successful products, or result in new treatment options being offered to patients; and that the duration and impact of COVID-19 may affect, precipitate or exacerbate one or more of the foregoing risks and uncertainties. Other risks and uncertainties include those identified under the heading "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022, and in any subsequent filings with the SEC.

As a result of these and other factors, we may not achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. The forward-looking statements contained in this prospectus supplement reflect our views as of the date hereof. We do not assume and specifically disclaim any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

USE OF PROCEEDS

We estimate that the net proceeds received by us from this offering, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately \$ million. If the underwriters exercise their option to purchase additional shares in full, we estimate that our net proceeds will be approximately \$ million after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We will receive only nominal additional proceeds from the exercise of the pre-funded warrants.

We intend to use the net proceeds from this offering for continued research and development of our product candidates, potential launch of avutometinib and defactinib in LGSOC, working capital and other general corporate purposes. General corporate purposes may include research and development costs, including conducting one or more clinical trials and process development and manufacturing of our product candidates, potential strategic acquisitions of complementary businesses, services or technologies, potential acquisition or licensing of additional technologies, expansion of our technology infrastructure and capabilities, working capital and capital expenditures.

We believe that the net proceeds from this offering, together with our existing cash and cash equivalents and investments, will be sufficient to fund our projected operating expenses and capital expenditures for at least the next twelve months. Our expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from clinical trials, as well as any collaborations that we may enter into with third parties for our product candidates, and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DESCRIPTION OF PRE-FUNDED WARRANTS

The following is a brief summary of certain terms and conditions of the pre-funded warrants being offered in this offering. The following description is subject in all respects to the provisions contained in the pre-funded warrants.

Form

The pre-funded warrants will be issued as individual warrant agreements to the purchasers. The form of pre-funded warrant will be filed as an exhibit to a Current Report on Form 8-K that we will file with the SEC. You should review the form of pre-funded warrant for a complete description of the terms and conditions applicable to the pre-funded warrants.

Term

The pre-funded warrants will not expire until they are fully exercised.

Exercisability

The pre-funded warrants will be immediately exercisable at any time until they are fully exercised. The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and payment in cash of the exercise price. No fractional shares of common stock will be issued in connection with the exercise of a pre-funded warrant. The holder of the pre-funded warrants may also satisfy its obligation to pay the exercise price through a "cashless exercise," in which the holder receives the net value of the pre-funded warrant in shares of common stock determined according to the formula set forth in the pre-funded warrant.

Exercise Limitations

We may not effect the exercise of any pre-funded warrant, and a holder will not be entitled to exercise any portion of any pre-funded warrant that, upon giving effect to such exercise, would cause: (i) the aggregate number of shares of common stock beneficially owned by such holder (together with its affiliates and other attribution parties) to exceed 9.99% of the number of shares of common stock outstanding immediately after giving effect to the exercise; or (ii) the combined voting power of our securities beneficially owned by such holder (together with its affiliates and other attribution parties) to exceed 9.99% of the combined voting power of all of our securities outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. However, any holder of a pre-funded warrant may increase or decrease such percentage to any other percentage not in excess of 9.99% provided that any such increase or decrease will not be effective until the sixty-first (61st) day after such notice is delivered to us subject to the terms of the pre-funded warrant.

Exercise Price

The exercise price of our shares of common stock purchasable upon the exercise of the pre-funded warrants is \$0.001 per share. The exercise price of the pre-funded warrants and the number of shares of common stock issuable upon exercise of the pre-funded warrants is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our shares of common stock, as well as upon any distribution of assets, including cash, stock or other property, to our stockholders. The exercise price of the pre-funded warrants will not be adjusted below the par value of our shares of common stock.

Fractional Shares

No fractional shares shall be issued upon the exercise of the pre-funded warrants, and the number of shares of common stock to be issued upon the exercise of such pre-funded warrants shall be rounded

down to the nearest whole share. If a fractional share interest arises upon any exercise of a pre-funded warrant, the Company shall eliminate such fractional share interest by paying the holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with the terms of the pre-funded warrants) of a full share, less (ii) the then-effective exercise price.

Transferability

Subject to applicable laws, the pre-funded warrants may be offered for sale, sold, transferred or assigned without our consent.

No Listing

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

Acquisitions

Upon the consummation of an acquisition (as described in the pre-funded warrants, and generally including any reorganization, recapitalization or reclassification of our shares of common stock, the sale, lease, exclusive license or other disposition of all or substantially all of our assets, our merger or consolidation with or into another person, or any other corporate reorganization in which our stockholders immediately following such transaction own less than a majority of the voting power of our (or the surviving entity's) outstanding shares of common stock or outstanding shares of common stock, or if we are not the surviving entity, or if our stockholders sell or transfer shares representing at least a majority of our then-total outstanding combined voting power), the holders of the pre-funded warrants will be entitled to receive, upon exercise of the pre-funded warrants, the kind and amount of securities, cash or other property that such holders would have received had they exercised the pre-funded warrants immediately prior to such acquisition, without regard to any limitations on exercise contained in the pre-funded warrants.

No Rights as a Stockholder

Except for the right to participate in certain dividends and distributions and as otherwise provided in the pre-funded warrant or by virtue of such holder's ownership of shares of common stock, the holder of a pre-funded warrant does not have the rights or privileges of a holder of our shares of common stock, including any voting rights, until such holder exercises the pre-funded warrant.

Waivers and Amendments

The pre-funded warrants and any term thereof may only be amended or otherwise changed, waived, discharged or terminated in writing, signed by the party against which enforcement of such amendment or other change, waiver, discharge or termination is sought.

DILUTION

If you invest in our common stock or pre-funded warrants in this offering, your ownership interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock or the value of our pre-funded warrants and the pro forma net tangible book value per share of our common stock after this offering.

Our historical net tangible book value as of March 31, 2023 was \$54.2 million, or \$3.24 per share of our common stock. Historical net tangible book value per share represents the amount of our total tangible assets less total liabilities, divided by 16,736,293 shares of our common stock outstanding as of March 31, 2023, after giving effect to the one-for-twelve reverse stock split, effected on May 31, 2023.

After giving effect to the sale of shares of common stock and pre-funded warrants to purchase shares of common stock by us, at a public offering price of \$ per share of per pre-funded warrant (which equals the price per share at which the common stock and \$ shares of common stock are being sold to the public in this offering, minus the \$0.001 per share exercise price of each such pre-funded warrant), (and excluding shares of common stock issued upon exercise of the pre-funded warrants or any resulting accounting associated therewith), less the estimated offering expenses payable by us, our pro forma net tangible book value as of March 31, 2023 would have been approximately \$ million, or approximately \$ per share. This represents an immediate increase in pro forma net tangible book value per share of \$ to existing stockholders and immediate dilution of \$ in pro forma net tangible book value per share to new investors purchasing common stock or pre-funded warrants in this offering.

Dilution per share to new investors is determined by subtracting as adjusted net tangible book value per share after this offering from the public offering price per share paid by new investors. The following table illustrates this calculation on a per share basis.

Public offering price per share	\$
Net tangible book value per share as of March 31, 2023	\$ 3.24
Increase in net tangible book value per share attributable to new investors	\$
Pro forma net tangible book value per share after this offering	\$
Dilution per share to new investors	\$

The above discussion and table are based on 16,736,293 shares outstanding as of March 31, 2023, and excludes the following, each as of March 31, 2023:

- 1,976,174 shares of our common stock issuable upon the exercise of stock options outstanding under our Equity Incentive Plans, at a weighted average exercise price of \$22.45 per share;
- 160,584 shares of our common stock issuable upon the vesting of restricted stock units under our Equity Incentive Plans;
- 937,177 shares of our common stock reserved and available for future issuance under our 2021 Equity Incentive Plan, of which 54,580 shares are issuable upon the exercise of stock options granted subsequent to March 31, 2023 through the date hereof under the 2021 Equity Incentive Plan at a weighted-average exercise price of \$5.05 per share;
- 129,169 shares of our common stock reserved and available for future issuance under our inducement award program, of which 1,416 shares are issuable upon the exercise of stock options granted subsequent to March 31, 2023 through the date hereof under the inducement award program at a weighted-average exercise price of \$4.68 per share;
- 82,101 shares of our common stock available for future issuance under our Amended and Restated 2018 Employee Stock Purchase Plan;

- 833,334 shares of our common stock issuable upon conversion of our outstanding Series A Preferred Stock;
- 4,236,570 shares of our common stock issuable upon conversion of our outstanding Series B Preferred Stock; and
- 4,012 shares of our common stock issuable upon conversion of our outstanding 5.00% Convertible Senior Notes due in 2048.

This discussion of dilution, and the table quantifying it, assumes (i) the one-for-twelve reverse stock split of our issued and outstanding common stock that we effected on May 31, 2023, (ii) except as noted above, no issuance or exercise of stock options or warrants after March 31, 2023, no conversions into common stock of our convertible securities after March 31, 2023, (iii) no exercise of any of the pre-funded warrants to be offered and sold by us in this offering, and (iv) no exercise by the underwriters of their option to purchase additional shares of common stock in this offering. The exercise of outstanding options to purchase shares of our common stock having an exercise price less than the public offering price would increase the dilutive effect to new investors.

If the underwriters exercise in full their option to purchase up to an additional shares of common stock at \$ per share, the pro forma net tangible book value after this offering would be approximately \$ per share, representing an increase in net tangible book value of approximately \$ per share to existing stockholders and immediate dilution in net tangible book value of approximately \$ per share to investors purchasing our common stock in this offering at the public offering price. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

To the extent any outstanding options or pre-funded warrants are exercised or any outstanding restricted stock units vest, new options, restricted stock units or other equity awards are issued under our equity incentive plans, or we issue additional equity or convertible debt securities in the future, there will be further dilution to new investors.

UNDERWRITING

Underwriting

RBC Capital Markets, LLC and Cantor Fitzgerald & Co. are acting as joint book-running managers of the offering and as representatives of the several underwriters named below. Subject to the terms and conditions stated in the underwriting agreement dated the date of this prospectus supplement, each underwriter has severally and not jointly agreed to purchase, and we have agreed to sell to that underwriter, the number of shares of our common stock or pre-funded warrants set forth opposite the underwriter's name.

	Number	Number of Pre-Funded
Underwriter	of Shares	Warrants
RBC Capital Markets, LLC		
Cantor Fitzgerald & Co.		
Total		

The underwriting agreement provides that the obligations of the underwriters to purchase the shares of common stock or pre-funded warrants included in this offering are subject to approval of legal matters by counsel and to other conditions. The underwriters are obligated to purchase all the shares of common stock or pre-funded warrants (other than those covered by the underwriters' option to purchase additional shares described below) if they purchase any of the shares.

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover of this prospectus. Any shares sold by the underwriters to securities dealers may be sold at a discount from the initial public offering price not to exceed \$ per share of common stock or \$ per pre-funded warrant. If all the shares of common stock or pre-funded warrants are not sold at the initial offering price, the underwriters may change the offering price and the other selling terms.

Underwriting discounts and commissions

The following table shows the underwriting discounts and commissions that we are to pay to the underwriters in connection with this offering. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Paid by the Company	
	No Exercise	Full Exercise
Per share	\$	\$
Per Pre-Funded Warrant	\$	\$
Total	\$	\$

Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933 (the "Securities Act"), or to contribute to payments the underwriters may be required to make because of any of those liabilities.

Option to Purchase Additional Shares

If the underwriters sell more shares than the total number set forth in the table above, we have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase up to additional shares at the public offering price less the underwriting

discount. To the extent the option is exercised, each underwriter must purchase a number of additional shares approximately proportionate to that underwriter's initial purchase commitment. Any shares issued or sold under the option will be issued and sold on the same terms and conditions as the other shares that are the subject of this offering.

Lock-Ups

We and our officers and directors have agreed that we will not offer, sell, contract to sell, pledge or otherwise dispose of (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the securityholder or any affiliate of the securityholder or any person in privity with the securityholder or any affiliate of the securityholder), directly or indirectly, including the filing (or participation in the filing) of a registration statement (except for the filing of any resale registration statement which the Company may be contractually obligated to file pursuant to agreements in effect on the date hereof and incorporated by reference in the Registration Statement, as such term is defined in the Underwriting Agreement) with the SEC in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Securities Exchange Act of 1934, as amended, and the rules and regulations of the SEC promulgated thereunder (the "Exchange Act") with respect to, any shares of capital stock of the Company or any securities convertible into, or exercisable or exchangeable for such capital stock, or publicly announce an intention to effect any such transaction, without the prior written consent of RBC Capital Markets, LLC and Cantor Fitzgerald & Co., for a period of 90 days after the date of this prospectus supplement.

The restrictions described in the immediately preceding paragraph do not apply to:

- a) transactions relating to shares of our common stock or other securities acquired in this
 offering or in open market transactions after the completion of this offering; provided that no
 filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made
 in connection with subsequent sales of our common stock or other securities acquired in such
 transactions (other than as otherwise permitted pursuant to the other exceptions outlined
 below);
- b) transfers to the Company pursuant to a "net" or "cashless" exercise by the securityholder of outstanding equity awards pursuant to an employee benefit plan of the Company as in effect and disclosed herein, including to satisfy the exercise price or withholding tax or remittance obligations; provided that (i) any shares of our common stock received upon such exercise shall be subject to all of the restrictions set forth in this letter agreement and (ii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period, unless such filing indicates in the footnotes thereto that the filing relates to the exercise of equity awards, that no shares were sold to the public by the reporting person and the shares of our common stock received upon exercise of such securities are subject to a lock-up agreement with the underwriters of this offering;
- c) the exercise of options, stock appreciation rights or warrants to purchase shares of our common stock pursuant to an employee benefit plan disclosed herein; provided that (i) any shares of our common stock received upon such exercise shall be subject to all of the restrictions set forth in this letter agreement and (ii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period, unless such filing shall indicate in the footnotes thereto that such filing relates to the exercise of options, stock appreciation rights or warrants to purchase shares of our common stock and the shares of our common stock

- received upon exercise of such securities are subject to a lock-up agreement with the underwriters of this offering;
- d) transfers of shares of our common stock or any security convertible into our common stock as a bona fide gift; provided that (i) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period, unless such filing indicates in the footnotes thereto that such transfer was made in connection with a bona fide gift and the shares of common stock or securities convertible into our common stock, as applicable, received pursuant to the bona fide gift are subject to a lock-up agreement with the underwriters of this offering, and (ii) each donee, distributee or transferee shall sign and deliver a lock-up agreement substantially in the form of the letter agreements signed in connection with this offering;
- e) distributions of shares of our common stock or any security convertible into our common stock to partners, limited partners, members, managers, affiliates (within the meaning set forth in Rule 405 under the Securities Act, as amended, and including the subsidiaries of the securityholder), stockholders or holders of similar equity interests of the securityholder or to any investment fund or other entity that directly or indirectly controls or manages, is under common control with, or is controlled or managed by, the securityholder or affiliates of the securityholder (including, for the avoidance of doubt, where the securityholder is a partnership, to its general partner or a successor partnership or fund, or any other funds controlled or managed by such partnership) (including upon the liquidation or dissolution of the securityholder pursuant to a plan of liquidation approved by the securityholder's equity holders) or in the case of a trust, to a grantor or beneficiary of the trust; provided that (i) each donee, distributee or transferee shall sign and deliver a lock-up agreement substantially in the form of the letter agreements signed in connection with this offering and (ii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period. unless such filing indicates in the footnotes thereto that such transfer is a distribution to limited partners, members, stockholders or holders of similar equity interests, that no shares of our common stock or securities convertible into our common stock, as applicable, were sold to the public by the reporting person and the shares of our common stock or securities convertible into our common stock, as applicable, distributed are subject to a lock-up agreement with the underwriters of this offering;
- transfers of shares of our common stock, (i) to any immediate family member, trusts for the direct or indirect benefit of the securityholder or the immediate family members of the securityholder or any of their successors upon death, or any partnership or limited liability company, the partners or members of which consist of the securityholder and/or immediate family members or other dependents of the securityholder, and in each case such transfer does not involve a disposition for value, or (ii) to a nominee or custodian of a person or entity to whom disposition or transfer would be permitted under clause (f)(i) above (for purposes of this letter agreement, "immediate family" means any relationship by blood, marriage or adoption, not more remote than first cousin); provided that in the case of any transfer pursuant to this clause (f), (i) each donee, distributee or transferee shall sign and deliver a lock-up agreement substantially in the form of the letter agreements signed in connection with this offering and (ii) no filing by any party (donor, donee, transferor or transferee) under the Exchange Act (other than any required filing on a Form 5 made after the expiration of the restricted period or, if a Form 5 filing is required to be made prior to the expiration of the restricted period, such Form 5 filing is made on the latest date permitted under the Exchange Act) or other public announcement reporting a reduction in beneficial ownership of our common stock shall be required or shall be made voluntarily in connection with such transfer or distribution;

- g) transfers of shares of our common stock or any other options or warrants or other rights to acquire our common stock or any securities exchangeable or exercisable for or convertible into our common stock by will or intestacy or pursuant to a domestic order divorce settlement, divorce decree or separation agreement; provided that in the case of any transfer pursuant to (g), unless prohibited by an order of a court, (i) each donee or distributee shall sign and deliver a lock-up agreement substantially in the form of the letter agreements signed in connection with this offering and (ii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period, unless such filing indicates in the footnotes thereto the nature of the transfer or disposition;
- h) transfers or dispositions of our common stock or any security convertible into or exercisable or exchangeable for our common stock to the Company (i) pursuant to any contractual arrangement in effect on the date hereof and described in the final prospectus used for this offering that provides for the repurchase of the securityholder's common stock or other securities by the Company or (ii) in connection with the termination of the securityholder's employment with or service to the Company; provided that in each case no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period, unless such filing indicates in the footnotes thereto the nature of the transfer or disposition;
- i) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act (a "Rule 10b5-1 Trading Plan") for the transfer of shares of our common stock, provided that (x) such plan does not provide for the transfer of our common stock during the restricted period and (y) no public announcement or filing under the Exchange Act shall be required or shall be voluntarily made by or on behalf of the securityholder or the Company during the restricted period regarding the establishment of such plan;
- j) (i) the transfer of shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of common stock and approved by the Company's board of directors involving a Change of Control (as defined below) and (ii) entry into any lock-up, voting or similar agreement pursuant to which the securityholder may agree to transfer, sell, tender or otherwise dispose of our common stock or such other securities in connection with a transaction described in (i) above, provided, that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the securityholders' common stock or any security convertible into or exercisable or exchangeable for our common stock shall remain subject to the terms of the letter agreements signed in connection with this offering;
- k) transfers pursuant to an order of a court or regulatory agency; provided that in the case of any transfer pursuant to (k), (i) unless prohibited by an order of a court or regulatory agency, the securityholder must request that each transferee sign and deliver a lock-up agreement substantially in the form of the letter agreements signed in connection with this offering and (ii) any filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of our common stock required to be made during the restricted period shall state that such transfer is pursuant to an order of a court or regulatory agency;
- transfers to the Company for the purpose of satisfying any tax or other governmental
 withholding obligation with respect to, or in connection with, a vesting event of the
 Company's securities, upon the exercise of the Company's securities or upon expiration of the
 Company's securities, in each case held by the securityholder; *provided* that no filing under
 Section 16(a)

of the Exchange Act, reporting a reduction in beneficial ownership of shares of Common Stock, shall be required or shall be voluntarily made during the restricted period, unless such filing indicates in the footnotes thereto that the shares were transferred to the Company in order to satisfy tax or other governmental withholding obligations of the reporting person and that no shares were sold to the public by the reporting person;

- m) sales of our common stock for the purpose of satisfying any tax or other governmental withholding obligation with respect to, or in connection with, a vesting event of the Company's securities, upon the exercise of the Company's securities or upon expiration of the Company's securities, in each case held by the securityholder; provided that no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period, unless such filing indicates in the footnotes thereto that the shares were sold in order to satisfy tax or other governmental withholding obligations of the reporting person; or
- n) in connection with sales of our common stock made pursuant to a Rule 10b5-1 Trading Plan that has been entered into by the securityholder prior to the date of this letter agreement; provided that (i) such Rule 10b5-1 Trading Plan was established by the securityholder prior to the execution of this letter agreement, the existence and details of such Rule 10b5-1 Trading Plan were communicated to the underwriters prior to the execution of this letter agreement, (ii) such Rule 10b5-1 Trading Plan will not be amended or otherwise modified during the restricted period, and (iii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of our common stock, shall be required or shall be voluntarily made during the restricted period, unless such filing indicates in the footnotes thereto that the shares were sold pursuant to such Rule 10b5-1 Trading Plan.

For purposes of clause (j) above, "Change of Control" means any bona fide third party tender offer, merger, consolidation or other similar transaction, in one transaction or a series of related transactions, the result of which is that any "person" (as defined in Section 13(d)(3) of the Exchange Act) or group of persons, other than the Company, becomes the beneficial owner (as defined Rule 13d-3 and 13d-5 of the Exchange Act) of more than 50% of total voting power of the voting stock of the Company (or the surviving entity).

Nasdaq Capital Market Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol "VSTM." We do not intend to list the pre-funded warrants on the Nasdaq Capital Market or any other national securities exchange or nationally recognized trading system.

Expenses and Reimbursements

We estimate that the total expenses of this offering will be \$\,\text{. We have agreed to reimburse}\$ the underwriters up to \$15,000 for expenses related to determining the offering's compliance with the rules of the Financial Industry Regulatory Authority (FINRA) and any filing with and the clearance of this offering with FINRA.

Price Stabilization, Short Positions and Penalty Bids

In connection with the offering, the underwriters may purchase and sell shares in the open market. Purchases and sales in the open market may include short sales, purchases to cover short positions, which may include purchases pursuant to the underwriters' option to purchase additional shares, and stabilizing purchases.

 Short sales involve secondary market sales by the underwriters of a greater number of shares than they are required to purchase in the offering.

- "Covered" short sales are sales of shares in an amount up to the number of shares represented by the underwriters' underwriters' option to purchase additional shares.
- "Naked" short sales are sales of shares in an amount in excess of the number of shares represented by the underwriters' option to purchase additional shares.
- Covering transactions involve purchases of shares either pursuant to the underwriters' option to purchase additional shares or in the open market in order to cover short positions.
 - To close a naked short position, the underwriters must purchase shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.
 - To close a covered short position, the underwriters must purchase shares in the open market
 or must exercise the option to purchase additional shares. In determining the source of
 shares to close the covered short position, the underwriters will consider, among other
 things, the price of shares available for purchase in the open market as compared to the
 price at which they may purchase shares through the underwriters' option to purchase
 additional shares.
- Stabilizing transactions involve bids to purchase shares so long as the stabilizing bids do not exceed a specified maximum.

Purchases to cover short positions and stabilizing purchases, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of the shares. They may also cause the price of the shares to be higher than the price that would otherwise exist in the open market in the absence of these transactions. The underwriters may conduct these transactions on the Nasdaq Capital Market, in the over-the-counter market or otherwise. If the underwriters commence any of these transactions, they may discontinue them at any time.

In addition, in connection with this offering, some of the underwriters (and selling group members) may engage in passive market making transactions in the shares on the Nasdaq Capital Market, prior to the pricing and completion of the offering. Passive market making consists of displaying bids on the Nasdaq Capital Market no higher than the bid prices of independent market makers and making purchases at prices no higher than those independent bids and effected in response to order flow. Net purchases by a passive market maker on each day are limited to a specified percentage of the passive market maker's average daily trading volume in the shares during a specified period and must be discontinued when that limit is reached. Passive market making may cause the price of the shares to be higher than the price that otherwise would exist in the open market in the absence of those transactions. If the underwriters commence passive market making transactions, they may discontinue them at any time.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

The underwriters are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities. The underwriters and their respective affiliates have in the past performed commercial banking, investment banking and advisory services for us from time to time for which they have received customary fees and reimbursement of expenses and may, from time to time, engage in transactions with and perform services for us in

the ordinary course of their business for which they may receive customary fees and reimbursement of expenses. In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments. Cantor Fitzgerald & Co. is the sales agent for our ATM pursuant to a sales agreement dated August 2, 2021 between us and Cantor Fitzgerald & Co.

Sales Outside the United States

No action has been taken in any jurisdiction (except in the United States) that would permit a public offering of our common stock or pre-funded warrants, or the possession, circulation or distribution of this prospectus supplement or any other material relating to us or our common stock in any jurisdiction where action for that purpose is required. Accordingly, the shares of common stock and pre-funded warrants may not be offered or sold, directly or indirectly, and neither this prospectus supplement nor any other offering material or advertisements in connection with our common stock or pre-funded warrants may be distributed or published, in or from any country or jurisdiction, except in compliance with any applicable rules and regulations of any such country or jurisdiction.

The underwriters may arrange to sell the common stock offered hereby in certain jurisdictions outside the United States, either directly or through affiliates, where it is permitted to do so.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State") an offer to the public of our common shares or pre-funded warrants may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of our common shares or pre-funded warrants may be made at any time under the following exemptions under the Prospectus Directive:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the representative for any such offer; or
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares of our common stock or pre-funded warrants shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to our common shares or pre-funded warrants in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and our common shares to be offered so as to enable an investor to decide to purchase our common shares or pre-funded warrants, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC

(as amended), including by Directive 2010/73/EU, and includes any relevant implementing measure in the Relevant Member State.

This European Economic Area selling restriction is in addition to any other selling restrictions set out below.

United Kingdom

In the United Kingdom, this prospectus is only addressed to and directed as qualified investors who are (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the Order); or (ii) high net worth entities and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). Any investment or investment activity to which this prospectus relates is available only to relevant persons and will only be engaged with relevant persons. Any person who is not a relevant person should not act or relay on this prospectus or any of its contents.

Hong Kong

The securities may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong) ("Companies (Winding Up and Miscellaneous Provisions) Ordinance") or which do not constitute an invitation to the public within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) ("Securities and Futures Ordinance"), or (ii) to "professional investors" as defined in the Securities and Futures Ordinance and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance, and no advertisement, invitation or document relating to the securities may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" in Hong Kong as defined in the Securities and Futures Ordinance and any rules made thereunder.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the securities may not be circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined under Section 4A of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA")) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to conditions set forth in the SFA.

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor, the securities (as defined in Section 239(1) of the SFA) of that corporation shall not be transferable for 6 months after that

corporation has acquired the securities under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer in that corporation's securities pursuant to Section 275(1A) of the SFA, (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore ("Regulation 32").

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole purpose is to hold investments and each beneficiary of the trust is an accredited investor, the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferable for 6 months after that trust has acquired the securities under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer that is made on terms that such rights or interest are acquired at a consideration of not less than S\$200,000 (or its equivalent in a foreign currency) for each transaction (whether such amount is to be paid for in cash or by exchange of securities or other assets), (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32.

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended), or the FIEA. The securities may not be offered or sold, directly or indirectly, in Japan or to or for the benefit of any resident of Japan (including any person resident in Japan or any corporation or other entity organized under the laws of Japan) or to others for reoffering or resale, directly or indirectly, in Japan or to or for the benefit of any resident of Japan, except pursuant to an exemption from the registration requirements of the FIEA and otherwise in compliance with any relevant laws and regulations of Japan.

Canada

The securities may be sold in Canada only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions, and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption form, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this offering memorandum (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In the

State of Israel, this document is being distributed only to, and is directed only at, and any offer of securities is directed only at, investors listed in the first addendum to the Israeli Securities Law (the "Addendum"), consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals", each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors will be required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

CERTAIN MATERIAL UNITED STATES FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF SHARES OF OUR COMMON STOCK

The following is a summary of certain material United States federal income and estate tax considerations relating to the purchase, ownership, and disposition of shares of our common stock by a non-U.S. holder (as defined below) that acquires our common stock in this offering and holds it as a capital asset within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the "Code"). No Non-U.S. Holders will be offered or sold pre-funded warrants to purchase shares of our common stock in this offering. For purposes of this summary, a "non-U.S. holder" is a beneficial owner of our common stock that, for United States federal income tax purposes, is an individual, corporation, estate or trust other than:

- an individual who is a citizen or resident of the United States;
- a corporation, or any other organization taxable as a corporation for United States federal income tax purposes, that is created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate the income of which is subject to United States federal income taxation regardless of its source; or
- a trust if (1) a court within the United States is able to exercise primary supervision over the trust's administration and one or more United States persons (as defined in the Code) have the authority to control all substantial decisions of that trust, or (2) the trust has in effect a valid election under the applicable Treasury regulations to be treated as a United States person.

A modified definition of "non-U.S. holder" applies for United States federal estate tax purposes (as discussed below).

This summary is based upon the Code, Treasury regulations promulgated or proposed thereunder, judicial decisions, rulings, and administrative interpretations thereof, all as of the date hereof and all of which are subject to change, possibly with retroactive effect. The foregoing are subject to differing interpretations which could affect the tax consequences described herein. This summary does not purport to be a complete analysis of all the potential tax considerations relevant to non-U.S. holders of our common stock. In addition, this summary does not address all aspects of United States federal income and estate taxation that may be applicable to non-U.S. holders in light of their particular circumstances or status, nor does it address specific tax considerations that may be relevant to particular persons (including, for example, financial institutions, broker-dealers, insurance companies, partnerships or other pass-through entities, certain United States expatriates, tax-exempt organizations, pension plans, "controlled foreign corporations," "passive foreign investment companies," corporations that accumulate earnings to avoid United States federal income tax, persons in special situations, such as those who have elected to mark securities to market or those who hold shares of our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment, persons that have a "functional currency" other than the U.S. dollar, or holders subject to the alternative minimum tax or the unearned income Medicare contribution tax). Any change in law could impact the tax considerations that we describe in this summary. In addition, except as explicitly addressed herein with respect to estate tax, this summary does not address certain estate and any gift tax considerations or considerations under the tax laws of any state, local or non-United States jurisdiction.

If a partnership (including any entity or arrangement treated as a partnership for United States federal income tax purposes) owns our common stock, the tax treatment of a person treated as a partner in the partnership for United States federal income tax purposes generally will depend upon the status of the partner and the activities of the partnership. Partnerships and other entities that are treated as partnerships for United States federal income tax purposes and persons holding our common

stock through a partnership or other entity treated as a partnership for United States federal income tax purposes should consult their tax advisors.

There can be no assurance that the Internal Revenue Service ("IRS") will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain, a ruling from the IRS or an opinion of counsel with respect to the United States federal income or estate tax consequences to a non-U.S. holder of the purchase, ownership or disposition of our common stock.

THIS SUMMARY IS FOR GENERAL INFORMATION ONLY AND IS NOT INTENDED TO BE TAX ADVICE. NON-U.S. HOLDERS ARE URGED TO CONSULT THEIR TAX ADVISOR REGARDING THE UNITED STATES FEDERAL INCOME AND ESTATE TAXATION, STATE, LOCAL, AND NON-UNITED STATES TAXATION AND OTHER TAX CONSEQUENCES TO THEM OF THE PURCHASE, OWNERSHIP, AND DISPOSITION OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES UNDER ANY APPLICABLE TAX TREATY.

Distributions on our shares of our common stock

We do not currently expect to pay dividends. In the event we do make a distribution of cash or property with respect to our common stock, any such distributions generally will constitute dividends for United States federal income tax purposes to the extent of our current or accumulated earnings and profits, as determined under United States federal income tax principles, and will be subject to withholding as described in the next paragraph below. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of capital to the extent of the non-U.S. holder's adjusted tax basis in shares of our common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in "Gain on sale, exchange or other taxable disposition of our common stock." Any distribution described in this paragraph would also be subject to the discussion below in "Additional withholding and reporting requirements" and "Information reporting and backup withholding."

Any dividends paid to a non-U.S. holder with respect to shares of our common stock generally will be subject to withholding of United States federal tax at a 30% rate unless such non-U.S. holder provides us or our agent, as the case may be, with the appropriate IRS Form W-8, such as:

- IRS Form W-8BEN or W-8BEN-E, as applicable (or successor form), certifying, under penalties of perjury, that such non-U.S. holder is entitled to a reduction in withholding under an applicable income tax treaty, or
- IRS Form W-8ECI (or successor form) certifying, under penalties of perjury that a dividend paid on our common stock is not subject to withholding tax because it is effectively connected with the conduct of a trade or business in the United States of the non-U.S. holder (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained in the U.S.) (in which case such dividend generally will be subject to graduated United States federal income tax rates on a net income basis as described below).

The certification requirement described above also may require a non-U.S. holder that provides an IRS form or that claims treaty benefits to provide its United States taxpayer identification number. These certifications must be provided to the applicable withholding agent prior to the payment of dividends and must be updated periodically. Special certification and other requirements apply in the case of certain Non-U.S. holders that hold shares of our common stock through intermediaries or are pass-through entities for U.S. federal income tax purposes.

Each non-U.S. holder is urged to consult its own tax advisor about the specific methods for satisfying these requirements. A claim for exemption will not be valid if the person receiving the applicable form has actual knowledge or reason to know that the statements on the form are false.

If dividends are "effectively connected" with the conduct of a trade or business in the United States of a non-U.S. holder (and, if required by an applicable income tax treaty, are attributable to a permanent establishment or fixed base maintained by such non-U.S. holder in the United States), the non-U.S. holder, although exempt from the withholding tax described above (provided that the certifications described above are satisfied), will generally be subject to United States federal income tax on such dividends on a net income basis in the same manner as if it were a resident of the United States. In addition, if the non-U.S. holder is taxable as a corporation for United States federal income tax purposes, such holder may, under certain circumstances, be subject to an additional "branch profits tax" equal to 30% (unless reduced by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year.

If a non-U.S. holder is eligible for a reduced rate of United States federal withholding tax pursuant to an applicable income tax treaty, such holder may obtain a refund or credit of any amounts withheld in excess of that rate by timely filing an appropriate refund claim with the IRS.

Gain on sale, exchange or other taxable disposition of shares of our common stock

Subject to the discussion below under "Additional withholding and reporting requirements" and "Information reporting and backup withholding," a non-U.S. holder generally will not be subject to United States federal income tax or withholding tax on gain realized upon a sale, exchange or other taxable disposition of shares of our common stock (including a redemption, but only if the redemption would be treated as a sale or exchange rather than a distribution for United States federal income tax purposes) unless:

- the gain is "effectively connected" with the conduct of a trade or business of the non-U.S. holder in the United States (and, if required by an applicable income tax treaty, the gain is attributable to a permanent establishment or fixed base maintained in the United States);
- (2) the non-U.S. holder is an individual who is present in the United States for 183 or more days in the taxable year of the disposition and meets certain other conditions; or
- (3) we are or have been a "United States real property holding corporation" ("USRPHC") for United States federal income tax purposes at any time within the shorter of the five-year period preceding the disposition and the non-U.S. holder's holding period for our common stock (the "relevant period").

If the first exception applies, the non-U.S. holder generally will be subject to United States federal income tax on a net income basis with respect to such gain in the same manner as if such holder were a resident of the United States. In addition, if the non-U.S. holder is a corporation for United States federal income tax purposes, such non-U.S. holder may, under certain circumstances, also be subject to an additional "branch profits tax" at a 30% rate (or at a lower rate under an applicable income tax treaty) on its effectively connected earnings and profits.

If the second exception applies, the non-U.S. holder generally will be subject to United States federal income tax at a rate of 30% (unless an applicable income tax treaty provides otherwise) on the amount by which such non-U.S. holder's capital gains allocable to United States sources exceed capital losses allocable to United States sources during the taxable year of the disposition.

With respect to the third exception above, although there can be no assurances, we believe we currently are not, and we do not anticipate becoming, a USRPHC for United States federal income tax purposes. However, because the determination of whether we are a USRPHC depends on the fair market value of our United States real property interests relative to the fair market value of our other trade or business assets and our foreign real property interests, there can be no assurance that we will not become a USRPHC in the future. Generally, a corporation is a USRPHC only if the fair market value of its United States real property interests (as defined in the Code) equals or exceeds 50% of

the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Even if we are or become a USRPHC, a non-U.S. holder would not be subject to U.S. federal income tax on a sale, exchange or other taxable disposition of our common stock by reason of our status as a USRPHC so long as (i) our common stock continues to be regularly traded on an established securities market (within the meaning of Section 897(c)(3) of the Code) during the calendar year in which such disposition occurs and (ii) such non-U.S. holder does not own and is not deemed to own (directly, indirectly or constructively) more than 5% of our common stock at any time during the relevant period. If we are a USRPHC and the requirements of (i) or (ii) are not met, gain on the disposition of shares of our common stock generally will be taxed in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the "branch profits tax" will not apply.

Additional withholding and reporting requirements

Pursuant to Sections 1471 through 1474 of the Code, Treasury regulations promulgated thereunder, guidance from the IRS and intergovernmental agreements and subject to further guidance (collectively, "FATCA"), United States federal withholding tax at a rate of 30% may apply to payments of dividends made to non-U.S. financial institutions and certain other non-U.S. nonfinancial entities unless they satisfy certain due diligence and information reporting requirements. The IRS and the Department of Treasury have issued proposed regulations on which taxpayers may rely providing that these withholding rules will not apply to the gross proceeds of dispositions of shares of our common stock. An intergovernmental agreement between the United States and a foreign country where a holder or intermediary is located may modify the requirements in this paragraph. Non-U.S. holders should consult their tax advisors regarding the possible implications of FATCA on their investment in our common stock.

Information reporting and backup withholding

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions, regardless of whether withholding was required. A non-U.S. holder will generally be subject to backup withholding on dividends paid to such holder unless such holder furnishes a valid IRS Form W-8BEN or W-8BEN-E, as applicable (or such other applicable form and documentation as required by the Code or the Treasury regulations), certifying under penalties of perjury that it is a non-U.S. holder (and the payor does not have actual knowledge or reason to know that such holder is a United States person as defined under the Code), or such holder otherwise establishes an exemption. Dividends paid to non-U.S. holders subject to the United States federal withholding tax, as described above in "Distributions on shares of our common stock," generally will be exempt from U.S. backup withholding.

Information reporting and, depending on the circumstances, backup withholding will apply to the payment of the proceeds of a sale or other disposition of shares of our common stock by a non-U.S. holder effected by or through the United States office of any broker, United States or foreign, unless the holder certifies that it is not a United States person (as defined under the Code) and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-United States office of a broker. However, for information reporting purposes, dispositions effected through a non-United States office of a broker with substantial United States ownership or operations generally will be treated in a manner similar to dispositions effected through a United States office of a broker. Prospective investors should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

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

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a credit against a non-U.S. holder's United States federal income tax liability, if any, and may entitle such holder to a refund, provided that an appropriate claim is timely filed with the IRS.

Federal estate taxes

Shares of our common stock held (or treated as held) by an individual who is not a United States citizen or resident (as specifically determined for United States federal estate tax purposes) at the time of such individual's death generally will be included in the holder's gross estate for United States federal estate tax purposes, unless an applicable estate tax or other treaty provides otherwise, and, therefore, may be subject to United States federal estate tax.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including us. The address of the SEC website is www.sec.gov.

We maintain a website at www.verastem.com. Information contained in, or accessible through, our website is not a part of, and is not incorporated into, this prospectus, and you should not consider it part of this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus supplement the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement, and information in documents that we later file with the SEC will automatically update and supersede information in this prospectus supplement. We incorporate by reference into this prospectus supplement the documents listed below and any future filings made by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, except for information "furnished" under Items 2.02, 7.01 or 9.01 on Form 8-K or other information "furnished" to the SEC which is not deemed filed and not incorporated in this prospectus supplement, until the termination of the offering of securities described in this prospectus supplement. We hereby incorporate by reference the following documents:

- Our Annual Report on Form 10-K for the year ended December 31, 2022, as filed with the SEC on March 14, 2023;
- Our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2023, as filed with the SEC on May 9, 2023.
- Our <u>Definitive Proxy Statement on Schedule 14A</u>, filed with the SEC on April 5, 2023 (excluding those portions that are not incorporated by reference into our <u>Annual Report on Form 10-K for the year ended December 31, 2022);</u>
- Our Current Reports on Form 8-K filed with the SEC on <u>January 25, 2023</u>, <u>March 27, 2023</u>, <u>May 16, 2023</u>, <u>May 25, 2023</u> and <u>May 31, 2023</u>; and
- The description of our common stock, which is contained in the Registration Statement on Form 8-A, as filed with the SEC on January 23, 2012, as supplemented by the description of our common stock and preferred stock contained in Exhibit 4.5 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on March 14, 2023.

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

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Investor Relations Verastem, Inc. 117 Kendrick Street, Suite 500 Needham, Massachusetts 02494 (781) 292-4200

Copies of these filings are also available, without charge, on the SEC's website at www.sec.gov and on our website at www.verastem.com as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not a part of this prospectus supplement or the accompanying prospectus.

LEGAL MATTERS

The validity of the shares of common stock and pre-funded warrants offered hereby is being passed upon for us by Ropes & Gray LLP, Boston, Massachusetts. Covington & Burling LLP, New York, New York is counsel for the underwriters in connection with this offering.

EXPERTS

The consolidated financial statements of Verastem, Inc. appearing in Verastem, Inc.'s <u>Annual Report on Form 10-K for the year ended December 31, 2022</u> have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

PROSPECTUS



\$250,000,000

Common Stock Preferred Stock Warrants Debt Securities

We may offer and sell from time to time, in one or more series or issuances and in an amount and on terms that we will determine at the time of the offering, any combination, up to \$250,000,000 in the aggregate, of the securities described in this prospectus.

We will provide specific terms of any offering in a supplement to this prospectus. Any prospectus supplement may also add, update, or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you purchase any of the securities offered hereby.

These securities may be offered and sold in the same offering or in separate offerings; to or through underwriters, dealers, and agents; or directly to purchasers. The names of any underwriters, dealers, or agents involved in the sale of our securities and their compensation will be described in the applicable prospectus supplement.

Investing in our securities involves a high degree of risk. Before making an investment decision, please read the information under the heading "Risk Factors" beginning on page 3 of this prospectus and in the documents incorporated by reference into this prospectus.

Our common stock is listed on The Nasdaq Global Market under the symbol "VSTM." On March 25, 2022, the last reported sale price of our common stock was \$1.19 per share.

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

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ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, under the Securities Act of 1933, as amended, or the Securities Act, using a "shelf" registration process. Under this shelf registration process, we may offer to sell any combination of the securities described in this prospectus in one or more offerings for an aggregate offering amount of up to \$250,000,000. Each time we sell securities under this prospectus, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and the applicable prospectus supplement, including all documents incorporated herein and therein by reference, together with additional information described under "Where You Can Find More Information" below.

This prospectus does not include all of the information that is in the registration statement. We omitted certain parts of the registration statement from this prospectus as permitted by the SEC. We refer you to the registration statement and its exhibits for additional information about us and the securities that may be sold under this prospectus.

We have not authorized any dealer, agent or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and any accompanying prospectus supplement. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or an accompanying prospectus supplement. This prospectus and the accompanying prospectus supplement, if any, do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus and the accompanying prospectus supplement constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and the accompanying prospectus supplement, if any, is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus and any accompanying prospectus supplement is delivered or securities are sold on a later date.

References in this prospectus to "Verastem," the "Company," "we," "us," "our" and similar terms refer to Verastem, Inc. and our subsidiaries on a consolidated basis, as appropriate, unless we state otherwise or the context otherwise requires.

OUR COMPANY

We are a late stage development biopharmaceutical company, with ongoing registration directed trials, committed to advancing new medicines for patients battling cancer. Our pipeline is focused on novel anticancer agents that inhibit critical pathways in cancer that promote cancer cell survival and tumor growth, particularly rapidly accelerated fibrosarcoma (RAF)/mitogen-activated protein kinase (MEK) inhibition and focal adhesion kinase (FAK) inhibition.

Our most advanced product candidates, VS-6766 and defactinib, are being investigated in both preclinical and clinical studies for the treatment of various solid tumors, including, low-grade serous ovarian cancer (LGSOC), non-small cell lung cancer (NSCLC), colorectal cancer (CRC), pancreatic cancer, uveal melanoma, and endometrial cancer. We believe that VS-6766 may be beneficial as a therapeutic as a single agent or when used together in combination with defactinib, other agents, other pathway inhibitors or other current and emerging standard of care treatments in cancers that do not adequately respond to currently available therapies.

VS-6766 is an orally available first-in-class unique small molecule RAF/MEK clamp. In contrast to other MEK inhibitors commercially available and in development, VS-6766 is a dual RAF/MEK clamp that blocks both MEK kinase activity and the ability of RAF to phosphorylate MEK. MEK-only inhibitors (e.g. PD0325901) paradoxically induce MEK phosphorylation (pMEK) by relieving extracellular-signal-regulated-kinase (ERK)-dependent feedback inhibition of RAF which may limit their efficacy. By inhibiting RAF-mediated phosphorylation of MEK, VS-6766 has the advantage of not inducing pMEK. This unique mechanism of VS-6766 enables more effective inhibition of ERK signaling and may confer enhanced therapeutic activity against ERK-dependent, RAS or BRAF mutant tumors.

Defactinib is an oral small molecule inhibitor of FAK and proline-rich tyrosine kinase (PYK2) that is currently being evaluated as a potential combination therapy for various solid tumors. FAK is a non-receptor tyrosine kinase encoded by the protein tyrosine kinase-2 (PTK-2) gene that is involved in cellular adhesion and, in cancer, metastatic capability. Defactinib targets malignant cells both directly and through modulation of the tumor microenvironment. Defactinib has received orphan drug designation in ovarian cancer in the United States, the European Union, and Australia. Preclinical research by our scientists and collaborators at world-renowned research institutions has described the effect of FAK inhibition as enhancing immune response by decreasing immunosuppressive cells, increasing cytotoxic T cells, and reducing stromal density, which allows tumor-killing immune cells to enter the tumor.

The combination of VS-6766 and defactinib has been found to be clinically active in patients with KRAS mutant tumors and received breakthrough designation from the U.S. Food & Drug Administration for the treatment of all patients with recurrent LGSOC, regardless of KRAS status after one or more prior lines of therapy, including platinum-based chemotherapy.

We are headquartered in Needham, Massachusetts, and our principal offices are located at 117 Kendrick Street, Suite 500, Needham, Massachusetts. Our telephone number is (781) 292-4200.

RISK FACTORS

Investing in our securities involves a high degree of risk. See "Item 1A — Risk Factors" in our most recent Annual Report on Form 10-K incorporated by reference in this prospectus and in any subsequent Quarterly Report on Form 10-Q and the "Risk Factors" section in the applicable prospectus supplement for a discussion of the factors you should carefully consider before deciding to purchase our securities. Before you invest in our securities, you should carefully consider these risks as well as other information we include or incorporate by reference into this prospectus and the applicable prospectus supplement. The risks and uncertainties we have described are not the only ones facing our Company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities. The discussion of risks includes or refers to forward-looking statements; you should read the explanation of the qualifications and limitations on such forward-looking statements discussed elsewhere in this prospectus.

FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the other documents we have filed with the SEC that are incorporated herein by reference contain forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements related to present facts or current conditions or historical facts, including statements regarding our strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. Such statements relate to, among other things, the development and activity of our product candidates, including VS-6766 (RAF/MEK program) and defactinib (FAK program), the structure of our planned and pending clinical trials and the timeline and indication for clinical development, regulatory submission and commercialization activities. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Forward-looking statements are not guarantees of future performance and our actual results could differ materially from the results discussed in the forward-looking statements we make. In particular, you should consider the numerous risks described in our <u>Annual Report on Form 10-K for the year ended December 31, 2021</u> and any subsequent Quarterly Reports on Form 10-Q and Annual Reports on Form 10-K, each incorporated by reference in this prospectus, and in the "Risk Factors" section in the applicable prospectus supplement. See "Where You Can Find More Information."

As a result of these and other factors, we may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. The forward-looking statements contained in this prospectus reflect our views as of the date hereof. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

USE OF PROCEEDS

Except as otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds we receive from our sale of the securities covered by this prospectus for general corporate purposes, which may include working capital, capital expenditures, research and development expenditures, clinical trial expenditures, commercial expenditures, milestone payments under in-license agreements, and possible acquisitions. Additional information on the use of net proceeds we receive from the sale of securities covered by this prospectus may be set forth in the prospectus supplement relating to the specific offering.

PLAN OF DISTRIBUTION

We may sell securities in any of the ways described below or in any combination:

- · through one or more underwriters;
- through dealers, who may act as agents or principal (including a block trade in which a broker or dealer so engaged will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction);
- · through one or more agents;
- · through registered direct offerings;
- as part of a collaboration with a third party;
- · as part of an acquisition or merger with a third party;
- through at-the-market issuances;
- · in privately negotiated transactions; or
- directly to purchasers or to a single purchaser.

The distribution of the securities by us may be effected from time to time in one or more transactions:

- at a fixed price, or prices, which may be changed from time to time;
- at market prices prevailing at the time of sale;
- · at prices related to such prevailing market prices; or
- at negotiated prices.

Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions.

The prospectus supplement will describe the terms of the offering of the securities, including the following, as applicable:

- the terms of the securities being offered, including the public offering price of the securities and the proceeds to us;
- the name or names of any underwriters, dealers or agents and the amounts of securities underwritten or purchased by each of them;
- any underwriting discounts and commissions or agency fees and other items constituting underwriters' or agents' compensation;
- any options under which underwriters may purchase additional securities from us;
- · any discounts or concessions allowed or reallowed or paid to dealers; and
- any securities exchanges on which the securities may be listed.

Only the agents or underwriters named in each prospectus supplement are agents or underwriters in connection with the securities being offered thereby.

We may authorize underwriters, dealers or other persons acting as our agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in each applicable prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval. Delayed delivery contracts will be subject only to those conditions set forth in

each applicable prospectus supplement, and each prospectus supplement will set forth any commissions we pay for solicitation of these contracts.

We may indemnify agents, underwriters, dealers, or other third parties who participate in the distribution of securities against certain liabilities, including liabilities under the Securities Act, and agree to contribute to payments which these agents, underwriters, dealers, or other third parties may be required to make. Agents, underwriters, dealers and such other third parties may be customers of, engage in transactions with, or perform services for us in the ordinary course of business. We may also use underwriters or such other third parties with whom we have a material relationship. We will describe the nature of any such relationship in the applicable prospectus supplement.

One or more firms, referred to as "remarketing firms," may also offer or sell the securities, if a prospectus supplement so indicates, in connection with a remarketing arrangement upon their purchase. Remarketing firms will act as principals for their own accounts or as our agents. These remarketing firms will offer or sell the securities in accordance with the terms of the securities. Each prospectus supplement will identify and describe any remarketing firm and the terms of its agreement, if any, with us and will describe the remarketing firm's compensation. Remarketing firms may be deemed to be underwriters in connection with the securities they remarket. Remarketing firms may be entitled under agreements that may be entered into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, and may engage in transactions with or perform services for us in the ordinary course of business.

Certain underwriters may use this prospectus and any accompanying prospectus supplement for offers and sales related to market-making transactions in the securities. These underwriters may act as principal or agent in these transactions, and the sales will be made at prices related to prevailing market prices at the time of sale. Any underwriters involved in the sale of the securities may qualify as "underwriters" within the meaning of Section 2(a)(11) of the Securities Act. In addition, the underwriters' commissions, discounts or concessions may qualify as underwriters' compensation under the Securities Act and the rules of the Financial Industry Regulatory Authority.

Our common stock is listed on The Nasdaq Global Market. Underwriters may make a market in our common stock, but will not be obligated to do so and may discontinue any market making at any time without notice. We can make no assurance as to the development, maintenance or liquidity of any trading market for the securities.

Certain persons participating in an offering may engage in overallotment, stabilizing transactions, short covering transactions and penalty bids in accordance with rules and regulations under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Overallotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a short covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

DESCRIPTION OF COMMON STOCK

The description of our common stock is incorporated by reference to Exhibit 4.5 of our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on March 28, 2022, including any amendments or reports filed for the purpose of updating such description.

DESCRIPTION OF PREFERRED STOCK

Under the terms of our certificate of incorporation, our board of directors is authorized to issue up to 5,000,000 shares of our preferred stock, par value \$0.0001 per share, in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock. As of December 31, 2021, we had no shares of preferred stock outstanding. It is not possible to state the actual effect of the issuance of any shares of preferred stock upon the rights of the holders of common stock until the board of directors determines the specific rights of the holders of preferred stock. However, effects of the issuance of preferred stock include restricting dividends on common stock, diluting the voting power of common stock, impairing the liquidation rights of common stock, and making it more difficult for a third party to acquire us, which could have the effect of discouraging a third party from acquiring, or deterring a third party from paying a premium to acquire, a majority of our outstanding voting stock.

If we offer a specific class or series of preferred stock under this prospectus, we will describe the terms of the preferred stock in the prospectus supplement for such offering and will file a copy of the certificate establishing the terms of the preferred stock with the SEC. To the extent required, this description will include:

- the title and stated value;
- the number of shares offered, the liquidation preference per share and the purchase price;
- the dividend rate(s), period(s) and/or payment date(s), or method(s) of calculation for such dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- · the provisions for redemption, if applicable;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price (or how it will be calculated) and conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price (or how it will be calculated) and exchange period;
- · voting rights, if any, of the preferred stock;
- a discussion of any material U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the affairs of the Company; and
- any material limitations on issuance of any class or series of preferred stock ranking senior to or on a
 parity with the series of preferred stock as to dividend rights and rights upon liquidation, dissolution
 or winding up of the Company.

The preferred stock offered by this prospectus, when issued, will not have, or be subject to, any preemptive or similar rights.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase shares of our common stock, preferred stock and/or debt securities in one or more series together with other securities or separately, as described in each applicable prospectus supplement. Below is a description of certain general terms and provisions of the warrants that we may offer. Particular terms of the warrants will be described in the applicable warrant agreements and the applicable prospectus supplement for the warrants.

The applicable prospectus supplement will contain, where applicable, the following terms of and other information relating to the warrants:

- the specific designation and aggregate number of, and the price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the designation, amount and terms of the securities purchasable upon exercise of the warrants;
- if applicable, the exercise price for shares of our common stock and the number of shares of common stock to be received upon exercise of the warrants;
- if applicable, the exercise price for shares of our preferred stock, the number of shares of preferred stock to be received upon exercise, and a description of that class or series of our preferred stock;
- if applicable, the exercise price for our debt securities, the amount of our debt securities to be received upon exercise, and a description of that series of debt securities;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if the warrants may not be continuously exercised throughout that period, the specific date or dates on which the warrants may be exercised;
- whether the warrants will be issued in fully registered form or bearer form, in definitive or global
 form or in any combination of these forms, although, in any case, the form of a warrant included in a
 unit will correspond to the form of the unit and of any security included in that unit;
- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;
- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- if applicable, the date from and after which the warrants and the common stock, preferred stock and/or debt securities will be separately transferable;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the anti-dilution provisions of the warrants, if any;
- · any redemption or call provisions;
- · whether the warrants are to be sold separately or with other securities as parts of units; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

DESCRIPTION OF DEBT SECURITIES

We may issue the debt securities offered by this prospectus and any accompanying prospectus supplement under an indenture to be entered into between us and the trustee identified in the applicable prospectus supplement. The terms of the debt securities will include those stated in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as in effect on the date of the indenture. We have filed a copy of the form of indenture as an exhibit to the registration statement in which this prospectus is included. The indenture will be subject to and governed by the terms of the Trust Indenture Act of 1939.

We may offer under this prospectus debt securities that, unless otherwise specified in the applicable prospectus supplement, will represent direct, unsecured obligations of the Company and will rank equally with all of our other unsecured indebtedness.

The following statements relating to the debt securities and the indenture are summaries, qualified in their entirety by reference to the detailed provisions of the indenture.

General

We may issue the debt securities in one or more series with the same or various maturities, at par, at a premium, or at a discount. We will describe the particular terms of each series of debt securities in a prospectus supplement relating to that series, which we will file with the SEC.

The prospectus supplement will set forth, to the extent required, the following terms of the debt securities in respect of which the prospectus supplement is delivered:

- the title of the series;
- the aggregate principal amount;
- the issue price or prices, expressed as a percentage of the aggregate principal amount of the debt securities;
- any limit on the aggregate principal amount;
- the date or dates on which principal is payable;
- the interest rate or rates (which may be fixed or variable) or, if applicable, the method used to determine such rate or rates;
- the date or dates from which interest, if any, will be payable and any regular record date for the interest payable;
- the place or places where principal and, if applicable, premium and interest, are payable;
- the terms and conditions upon which we may, or the holders may require us to, redeem or repurchase the debt securities;
- the denominations in which such debt securities may be issuable, if other than denominations of \$1,000 or any integral multiple of that number;
- whether the debt securities are to be issuable in the form of certificated securities (as described below) or global securities (as described below);
- the portion of principal amount that will be payable upon declaration of acceleration of the maturity date if other than the principal amount of the debt securities;
- the currency of denomination;
- the designation of the currency, currencies or currency units in which payment of principal and, if applicable, premium and interest, will be made;
- if payments of principal and, if applicable, premium or interest, on the debt securities are to be made
 in one or more currencies or currency units other than the currency of denomination, the manner in
 which the exchange rate with respect to such payments will be determined;

- if amounts of principal and, if applicable, premium and interest may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index, then the manner in which such amounts will be determined;
- the provisions, if any, relating to any collateral provided for such debt securities;
- any addition to or change in the covenants and/or the acceleration provisions described in this
 prospectus or in the indenture;
- any events of default, if not otherwise described below under "Events of Default";
- the terms and conditions, if any, for conversion into or exchange for shares of our common stock or preferred stock;
- any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents;
 and
- the terms and conditions, if any, upon which the debt securities shall be subordinated in right of payment to other indebtedness of the Company.

We may issue discount debt securities that provide for an amount less than the stated principal amount to be due and payable upon acceleration of the maturity of such debt securities in accordance with the terms of the indenture. We may also issue debt securities in bearer form, with or without coupons. If we issue discount debt securities or debt securities in bearer form, we will describe material U.S. federal income tax considerations and other material special considerations which apply to these debt securities in the applicable prospectus supplement.

We may issue debt securities denominated in or payable in a foreign currency or currencies or a foreign currency unit or units. If we do, we will describe the restrictions, elections, and general tax considerations relating to the debt securities and the foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Exchange and/or Conversion Rights

We may issue debt securities which can be exchanged for or converted into shares of our common stock or preferred stock. If we do, we will describe the terms of exchange or conversion in the prospectus supplement relating to these debt securities.

Transfer and Exchange

We may issue debt securities that will be represented by either:

- "book-entry securities," which means that there will be one or more global securities registered in the name of a depositary or a nominee of a depositary; or
- "certificated securities," which means that they will be represented by a certificate issued in definitive registered form.

We will specify in the prospectus supplement applicable to a particular offering whether the debt securities offered will be book-entry or certificated securities.

Certificated Debt Securities

If you hold certificated debt securities, you may transfer or exchange such debt securities at the trustee's office or at the paying agent's office or agency in accordance with the terms of the indenture. You will not be charged a service charge for any transfer or exchange of certificated debt securities but may be required to pay an amount sufficient to cover any tax or other governmental charge payable in connection with such transfer or exchange.

You may effect the transfer of certificated debt securities and of the right to receive the principal of, premium, and/or interest, if any, on the certificated debt securities only by surrendering the certificate representing the certificated debt securities and having us or the trustee issue a new certificate to the new holder.

Global Securities

If we decide to issue debt securities in the form of one or more global securities, then we will register the global securities in the name of the depositary for the global securities or the nominee of the depositary, and the global securities will be delivered by the trustee to the depositary for credit to the accounts of the holders of beneficial interests in the debt securities.

The prospectus supplement will describe the specific terms of the depositary arrangement for debt securities of a series that are issued in global form. None of our Company, the trustee, any payment agent or the security registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in a global debt security or for maintaining, supervising or reviewing any records relating to these beneficial ownership interests.

No Protection in the Event of Change of Control

The indenture does not have any covenants or other provisions providing for a put or increased interest or otherwise that would afford holders of our debt securities additional protection in the event of a recapitalization transaction, a change of control of the Company, or a highly leveraged transaction. If we offer any covenants or provisions of this type with respect to any debt securities covered by this prospectus, we will describe them in the applicable prospectus supplement.

Covenants

Unless otherwise indicated in this prospectus or the applicable prospectus supplement, our debt securities will not have the benefit of any covenants that limit or restrict our business or operations, the pledging of our assets or the incurrence by us of indebtedness. We will describe in the applicable prospectus supplement any material covenants in respect of a series of debt securities.

Consolidation, Merger and Sale of Assets

We have agreed in the indenture that we will not consolidate with or merge into any other person or convey, transfer, sell or lease our properties and assets substantially as an entirety to any person, unless:

- the person formed by the consolidation or into or with which we are merged or the person to which our properties and assets are conveyed, transferred, sold or leased, is a corporation or entity treated as a corporation for U.S. federal income tax purposes organized and existing under the laws of the U.S., any state or the District of Columbia or a corporation or comparable legal entity treated as a corporation for U.S. federal income tax purposes organized under the laws of a foreign jurisdiction and, if we are not the surviving person, the surviving person has expressly assumed all of our obligations, including the payment of the principal of and, premium, if any, and interest on the debt securities and the performance of the other covenants under the indenture; and
- immediately before and immediately after giving effect to the transaction, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing under the indenture.

Events of Default

Unless otherwise specified in the applicable prospectus supplement, the following events will be events of default under the indenture with respect to debt securities of any series:

- we fail to pay any principal or premium, if any, when it becomes due;
- we fail to pay any interest within 30 days after it becomes due;
- we fail to observe or perform any other covenant in the debt securities or the indenture for 60 days
 after written notice specifying the failure from the trustee or the holders of not less than 25% in
 aggregate principal amount of the outstanding debt securities of that series; and
- certain events involving bankruptcy, insolvency or reorganization of Verastem or any of our significant subsidiaries.

The trustee may withhold notice to the holders of the debt securities of any series of any default, except in payment of principal of or premium, if any, or interest on the debt securities of a series, if the trustee considers it to be in the best interest of the holders of the debt securities of that series to do so.

If an event of default (other than an event of default resulting from certain events of bankruptcy, insolvency or reorganization) occurs, and is continuing, then the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of any series may accelerate the maturity of the debt securities. If this happens, the entire principal amount, plus the premium, if any, of all the outstanding debt securities of the affected series plus accrued interest to the date of acceleration will be immediately due and payable. At any time after the acceleration, but before a judgment or decree based on such acceleration is obtained by the trustee, the holders of a majority in aggregate principal amount of outstanding debt securities of such series may rescind and annul such acceleration if:

- all events of default (other than nonpayment of accelerated principal, premium or interest) have been cured or waived;
- · all lawful interest on overdue interest and overdue principal has been paid; and
- the rescission would not conflict with any judgment or decree.

In addition, if the acceleration occurs at any time when we have outstanding indebtedness which is senior to the debt securities, the payment of the principal amount of outstanding debt securities may be subordinated in right of payment to the prior payment of any amounts due under the senior indebtedness, in which case the holders of debt securities will be entitled to payment under the terms prescribed in the instruments evidencing the senior indebtedness and the indenture.

If an event of default resulting from certain events of bankruptcy, insolvency or reorganization occurs, the principal, premium and interest amount with respect to all of the debt securities of any series will be due and payable immediately without any declaration or other act on the part of the trustee or the holders of the debt securities of that series.

The holders of a majority in principal amount of the outstanding debt securities of a series will have the right to waive any existing default or compliance with any provision of the indenture or the debt securities of that series and to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, subject to certain limitations specified in the indenture.

No holder of any debt security of a series will have any right to institute any proceeding with respect to the indenture or for any remedy under the indenture, unless:

- the holder gives to the trustee written notice of a continuing event of default;
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of the affected series make a written request and offer reasonable indemnity to the trustee to institute a proceeding as trustee;
- the trustee fails to institute a proceeding within 60 days after such request; and
- the holders of a majority in aggregate principal amount of the outstanding debt securities of the affected series do not give the trustee a direction inconsistent with such request during such 60-day period.

These limitations do not, however, apply to a suit instituted for payment on debt securities of any series on or after the due dates expressed in the debt securities.

We will periodically deliver certificates to the trustee regarding our compliance with our obligations under the indenture.

Modification and Waiver

From time to time, we and the trustee may, without the consent of holders of the debt securities of one or more series, amend the indenture or the debt securities of one or more series, or supplement the indenture, for certain specified purposes, including:

- to provide that the surviving entity following a change of control of Verastem permitted under the indenture will assume all of our obligations under the indenture and debt securities;
- to provide for certificated debt securities in addition to uncertificated debt securities;
- to comply with any requirements of the SEC under the Trust Indenture Act of 1939;
- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to cure any ambiguity, defect or inconsistency, or make any other change that does not materially and adversely affect the rights of any holder; and
- to appoint a successor trustee under the indenture with respect to one or more series.

From time to time we and the trustee may, with the consent of holders of at least a majority in principal amount of an outstanding series of debt securities, amend or supplement the indenture or the debt securities series, or waive compliance in a particular instance by us with any provision of the indenture or the debt securities. We may not, however, without the consent of each holder affected by such action, modify or supplement the indenture or the debt securities or waive compliance with any provision of the indenture or the debt securities in order to:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement, or waiver to the indenture or such debt security;
- reduce the rate of or change the time for payment of interest or reduce the amount of or postpone the date for payment of sinking fund or analogous obligations;
- reduce the principal of or change the stated maturity of the debt securities;
- make any debt security payable in money other than that stated in the debt security;
- change the amount or time of any payment required or reduce the premium payable upon any redemption, or change the time before which no such redemption may be made;
- waive a default in the payment of the principal of, premium, if any, or interest on the debt securities or a redemption payment;
- waive a redemption payment with respect to any debt securities or change any provision with respect to redemption of debt securities; or
- take any other action otherwise prohibited by the indenture to be taken without the consent of each holder affected by the action.

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

The indenture permits us, at any time, to elect to discharge our obligations with respect to one or more series of debt securities by following certain procedures described in the indenture. These procedures will allow us either:

- to defease and be discharged from any and all of our obligations with respect to any debt securities except for the following obligations (which discharge is referred to as "legal defeasance"):
 - (1) to register the transfer or exchange of such debt securities;
 - (2) to replace temporary or mutilated, destroyed, lost or stolen debt securities;
 - (3) to compensate and indemnify the trustee; or
- (4) to maintain an office or agency in respect of the debt securities and to hold monies for payment in trust; or
- to be released from our obligations with respect to the debt securities under certain covenants
 contained in the indenture, as well as any additional covenants which may be contained in an
 applicable supplemental indenture (which release is referred to as "covenant defeasance").

In order to exercise either defeasance option, we must deposit with the trustee or other qualifying trustee, in trust for that purpose:

- · money;
- U.S. Government Obligations (as described below) or Foreign Government Obligations (as described below) which through the scheduled payment of principal and interest in accordance with their terms will provide money; or
- a combination of money and/or U.S. Government Obligations and/or Foreign Government Obligations sufficient in the written opinion of a nationally-recognized firm of independent accountants to provide money;

which in each case specified above, provides a sufficient amount to pay the principal of, premium, if any, and interest, if any, on the debt securities of the series, on the scheduled due dates or on a selected date of redemption in accordance with the terms of the indenture.

In addition, defeasance may be effected only if, among other things:

- in the case of either legal or covenant defeasance, we deliver to the trustee an opinion of counsel, as specified in the indenture, stating that as a result of the defeasance neither the trust nor the trustee will be required to register as an investment company under the Investment Company Act of 1940;
- in the case of legal defeasance, we deliver to the trustee an opinion of counsel stating that we have received from, or there has been published by, the Internal Revenue Service a ruling to the effect that, or there has been a change in any applicable federal income tax law with the effect that (and the opinion shall confirm that), the holders of outstanding debt securities will not recognize income, gain or loss for U.S. federal income tax purposes solely as a result of such legal defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner, including as a result of prepayment, and at the same times as would have been the case if legal defeasance had not occurred;
- in the case of covenant defeasance, we deliver to the trustee an opinion of counsel to the effect that the holders of the outstanding debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of covenant defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner and at the same times as would have been the case if covenant defeasance had not occurred; and
- · certain other conditions described in the indenture are satisfied.

If we fail to comply with our remaining obligations under the indenture and any applicable supplemental indenture after a covenant defeasance of the indenture and any applicable supplemental indenture, and the debt securities are declared due and payable because of the occurrence of any undefeased event of default, the amount of money and/or U.S. Government Obligations and/or Foreign Government Obligations on deposit with the trustee could be insufficient to pay amounts due under the debt securities of the affected series at the time of acceleration. We will, however, remain liable in respect of these payments.

The term "U.S. Government Obligations" as used in the above discussion means securities which are direct obligations of or non-callable obligations guaranteed by the United States of America for the payment of which obligation or guarantee the full faith and credit of the United States of America is pledged.

The term "Foreign Government Obligations" as used in the above discussion means, with respect to debt securities of any series that are denominated in a currency other than U.S. dollars (1) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (2) obligations of a person controlled or supervised by or acting as an agent or instrumentality of such government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by that government, which in either case under clauses (1) or (2), are not callable or redeemable at the option of the issuer.

Regarding the Trustee

We will identify the trustee with respect to any series of debt securities in the prospectus supplement relating to the applicable debt securities. You should note that if the trustee becomes a creditor of Verastem,

the indenture and the Trust Indenture Act of 1939 limit the rights of the trustee to obtain payment of claims in certain cases, or to realize on certain property received in respect of any such claim, as security or otherwise. The trustee and its affiliates may engage in, and will be permitted to continue to engage in, other transactions with us and our affiliates. If, however, the trustee acquires any "conflicting interest" within the meaning of the Trust Indenture Act of 1939, it must eliminate such conflict or resign.

The holders of a majority in principal amount of the then outstanding debt securities of any series may direct the time, method and place of conducting any proceeding for exercising any remedy available to the trustee. If an event of default occurs and is continuing, the trustee, in the exercise of its rights and powers, must use the degree of care and skill of a prudent person in the conduct of his or her own affairs. Subject to that provision, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any of the holders of the debt securities, unless they have offered to the trustee reasonable indemnity or security.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including us. The address of the SEC website is www.sec.gov.

We maintain a website at www.verastem.com. Information contained in, or accessible through, our website is not a part of, and is not incorporated into, this prospectus, and you should not consider it part of this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede information in this prospectus. We incorporate by reference into this prospectus the documents listed below and any future filings made by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, except for information "furnished" under Items 2.02, 7.01 or 9.01 on Form 8-K or other information "furnished" to the SEC which is not deemed filed and not incorporated in this prospectus, until the termination of the offering of securities described in the applicable prospectus supplement. We hereby incorporate by reference the following documents:

- Our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on March 28, 2022;
- The information specifically incorporated by reference into our <u>Annual Report on Form 10-K for the year ended December 31, 2020</u> from our <u>definitive proxy statement on Schedule 14A, as filed with the SEC on April 8, 2021;</u>
- · Our Current Reports on Form 8-K filed with the SEC on January 11, 2022 and March 28, 2022; and
- The description of our common stock in our Registration Statement on <u>Form 8/A, dated January 23, 2012</u>, and as set forth by the description of our common stock set forth in Exhibit 4.5 of our <u>Annual Report on Form 10-K for the year ended December 31, 2021</u>, as filed with the SEC on March 28, 2022, including any other amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Investor Relations Verastem, Inc. 117 Kendrick Street, Suite 500 Needham, Massachusetts 02494 (781) 292-4200

Copies of these filings are also available, without charge, on the SEC's website at www.sec.gov.

LEGAL MATTERS

The validity of the issuance of the securities offered pursuant to this prospectus will be passed upon for us by Ropes & Gray LLP, Boston, Massachusetts. The validity of any securities will be passed upon for any underwriters or agents by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Verastem, Inc. appearing in Verastem, Inc.'s <u>Annual Report (Form 10-K) for the year ended December 31, 2021</u>, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

Shares of Common Stock Pre-Funded Warrants to Purchase Shares of Common Stock



PROSPECTUS SUPPLEMENT

Joint Book-Running Managers

RBC Capital Markets

Cantor