

PROSPECTUS

9,599,998 Shares



Common Stock

This prospectus covers the offer and resale of up to 9,599,998 shares of our common stock by the selling stockholders identified in the “Selling Stockholders” section of this prospectus. The shares of our common stock registered hereunder were sold to the selling stockholders in a private placement on May 14, 2021, which we refer to as the Private Placement, pursuant to the securities purchase agreement, dated as of May 12, 2021, by and among us and the selling stockholders, which we refer to as the Securities Purchase Agreement.

We are not selling any shares of common stock under this prospectus and will not receive any of the proceeds from the sale of such shares by the selling stockholders.

The selling stockholders may sell the shares of common stock described in this prospectus in a number of different ways and at varying prices. We provide more information about how the selling stockholders may sell shares of common stock in the section titled “Plan of Distribution” on page 12.

We are paying the cost of registering the shares of common stock covered by this prospectus as well as various related expenses. The selling stockholders are responsible for all selling commissions, transfer taxes and other costs related to the offer and sale of their shares.

Our common stock is listed on The Nasdaq Global Market under the symbol “MGTA.” On July 9, 2021, the closing price for our common stock, as reported on The Nasdaq Global Market, was \$9.38 per share.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading “[Risk Factors](#)” contained in this prospectus beginning on page 5 and any applicable prospectus supplement, and under similar headings in the other documents that are incorporated by reference into this prospectus.

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

The date of this Prospectus is July 12, 2021

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this registration statement, the selling stockholders may sell from time to time in one or more offerings the common stock described in 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, if applicable, any accompanying prospectus supplement. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or, if applicable, any accompanying prospectus supplement. This prospectus and, if applicable, any accompanying prospectus supplement, 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, if applicable, any 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, if applicable, any accompanying prospectus supplement, 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, if applicable, any accompanying prospectus supplement, is delivered or securities are sold on a later date.

Unless the context otherwise requires, “Magenta Therapeutics,” “Magenta,” the “Company,” “we,” “us,” “our” and similar names refer to Magenta Therapeutics, Inc. References to “selling stockholders” refer to the stockholders listed herein under the heading “Selling Stockholders” on page 9, who may sell shares from time to time as described in this prospectus.

SUMMARY

The following summary provides an overview of certain information about us, the Private Placement and selected information contained elsewhere in or incorporated by reference into this prospectus. This summary is not complete and does not contain all of the information that you should consider before investing in our securities. You should carefully read this entire prospectus, including the risks of investing discussed under “Risk Factors” beginning on page 5, the financial statements and related notes and other information included in or incorporated by reference into this prospectus, and, if applicable, any prospectus supplement or related free writing prospectus, and the additional information described under the captions “Where You Can Find More Information” and “Incorporation by Reference,” before investing in our securities.

About This Prospectus

The securities described in this prospectus were registered on a registration statement that we filed with the SEC using a “shelf” registration process to register 9,599,998 shares of our common stock. The shares were issued to the selling stockholders pursuant to the Securities Purchase Agreement, and as described in the Current Report on Form 8-K filed by us with the SEC on May 12, 2021. The shares are being registered for resale or other disposition by the selling stockholders. We will not receive any proceeds from the sale or other disposition of the shares registered hereunder, or interests therein.

About the Company

Magenta Therapeutics is a clinical-stage biotechnology company developing novel medicines to bring the curative power of stem cell transplants to more patients with blood cancers, genetic diseases and autoimmune diseases.

Magenta’s drug development pipeline includes multiple product candidates designed to improve stem cell transplants. Our lead clinical program is designed to more efficiently and reliably mobilize and collect sufficient functional stem cells for use in stem cell transplantation, a process known as mobilization. We are also developing product candidates that are designed to deplete targeted cells in the bone marrow to make space for the bone marrow to receive newly transplanted stem cells, a process known as conditioning. Our mobilization program is intended to enable rapid, reliable, predictable and safe mobilization and collection of high numbers of functional stem cells for transplant. Magenta’s targeted conditioning programs are intended to enhance the efficacy of and/or reduce the dosing levels, intensity or, in some cases, even the need for chemotoxic agents.

Magenta is developing MGTA-145 as a new first-line standard of care for stem cell mobilization in a broad range of diseases, for both autologous and allogeneic transplants. MGTA-145, a CXCR2 agonist, works in combination with plerixafor, a CXCR4 antagonist, to harness a complementary physiological mechanism for stem cell mobilization.

The goal of MGTA-145 is to be the preferred first-line mobilization option for all patients and donors through rapid, reliable, predictable and safe mobilization and collection of high numbers of functional stem cells.

In 2020, we completed a Phase 1 clinical trial in healthy volunteers to evaluate the ability of MGTA-145, in combination with plerixafor, to mobilize stem cells. Based on the results of the study, we have advanced the program into three ongoing and planned Phase 2 clinical trials, including an autologous transplant trial in multiple myeloma patients; an allogeneic transplant trial with healthy donor cells collected for transplant in patients with acute myeloid leukemia, myelodysplastic syndromes or acute lymphocytic leukemia, or ALL; and lastly, a planned trial in partnership with bluebird bio, Inc. to mobilize and collect the stem cells of sickle cell disease patients.

In addition to the opportunity to address the challenges in mobilization and collection of stem cells, Magenta also seeks to improve patient conditioning prior to transplant. Conditioning is the process by which patients are treated with chemotherapy prior to transplant to ensure that the bone marrow has sufficient space to receive newly transplanted stem cells. Currently, only approximately 50% of eligible patients receive a stem cell transplant, in part because of the risks and toxicities of the chemotherapeutic agents available today.

Magenta is developing a suite of novel antibody drug conjugates, or ADCs, for conditioning, a step in the transplant process that currently relies on the use of systemic chemotherapy agents and radiation. We are seeking to replace these toxic, non-targeted conditioning agents with targeted ADCs.

Magenta's lead conditioning program, MGTA-117, is designed to selectively deplete stem cells and reduce the need for high-dose or high-intensity chemotherapeutic agents in oncology applications and potentially eliminate the use of busulfan in gene therapy applications. MGTA-117 targets CD117, which is highly expressed on the cell surface of hematopoietic stem cells, or HSCs, and leukemia cells, making it an ideal target for conditioning across broad sets of diseases, including certain blood cancers, hemoglobinopathies (sickle cell disease and beta-thalassemia) and inherited metabolic disorders. We anticipate starting a Phase 1/2 dose escalation study by evaluating the safety, pharmacokinetics and pharmacodynamics of MGTA-117 as a single agent in a relapsed/refractory acute myeloid leukemia and myelodysplastic syndromes patient population. We expect to work with the U.S. Food and Drug Administration on an ongoing basis to transition the study to transplant-eligible patients after adequate data related to the safety, pharmacokinetics and pharmacodynamics of MGTA-117 have been collected in the relapsed/refractory acute myeloid leukemia and myelodysplastic syndromes patient population.

Our additional research-stage conditioning programs target stem and/or immune cells and are being designed to eliminate toxic chemotherapy conditioning regimens across multiple disease settings. Our C100 program focuses on addressing opportunities in immune reset for autoimmune diseases. Our C300 program is being designed to provide for lymphodepletion prior to cell therapies such as chimeric antigen receptor T cells, or CAR-T.

Magenta is also evaluating two programs with potential in cell therapy. Each is a small molecule used to manufacture a high number of functional stem cells, from either a donor or gene-modified stem cells from a patient. MGTA-456 is a cell therapy designed to generate higher cell doses that are well matched to the patient, which has been shown to improve the speed and success of engraftment in stem cell transplant and improve disease outcomes. In June 2020, we announced that we discontinued enrollment in our Phase 2 trial of MGTA-456 in inherited metabolic diseases. Enrollment in an investigator-initiated trial in patients with blood cancers has been completed, and we plan to use these data, when available, to inform a decision regarding future program development in blood cancers.

Magenta is also evaluating a cell therapy program, E478, in response to an unmet technological need recognized in the field of stem cell gene therapy – the challenge of achieving sufficiently high doses of gene-modified stem cells. E478 is a novel and proprietary small molecule aryl hydrocarbon receptor antagonist that was developed to increase the number of gene-modified HSCs *ex vivo* for stem cell based-gene therapy. We believe that E478 could represent a key component for unlocking the full value of gene therapy by providing each patient with an optimal dose of gene-modified HSCs for rapid, successful, durable engraftment.

Magenta intends to become a fully integrated discovery, development and commercial company in the field of stem cell transplant. We are developing our product candidates to be used individually or, in some cases, in combination with each other. As a result, our portfolio could be tailored to the patient's disease, such that a patient may receive more than one Magenta therapy as part of his or her individual stem cell transplant.

Corporate History and Information

We were incorporated under the laws of the State of Delaware on June 17, 2015 under the name HSCTCo Therapeutics, Inc. On February 16, 2016, we changed our name to Magenta Therapeutics, Inc. Our principal executive office is located at 100 Technology Square, Cambridge, Massachusetts 02139, and our telephone number is (857) 242-0170. Our website address is www.magentatx.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus. Additionally, you should not rely on any such information in making your decision whether to purchase our common stock. Our common stock trades on The Nasdaq Global Market under the symbol “MGTA.”

Private Placement

On May 12, 2021, we entered into the Securities Purchase Agreement with the selling stockholders named in this prospectus, pursuant to which we sold and issued shares of our common stock in the Private Placement.

At the closing of the Private Placement on May 14, 2021, we sold and issued to the selling stockholders 9,599,998 shares of our common stock at a purchase price of \$9.00 per share. The total purchase price paid by the selling stockholders at the closing was approximately \$86.4 million.

Under the terms of the Securities Purchase Agreement, we agreed to prepare and file, within 45 days after the closing of the Private Placement, one or more registration statements with the SEC to register for resale the shares of our common stock issued under the Securities Purchase Agreement, and generally to cause the applicable registration statement(s) to become effective as soon as practicable and in any event within 60 days from the filing of the applicable registration statement with the SEC.

Implications of Being an Emerging Growth Company and Smaller Reporting Company

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. We would cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of \$1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our initial public offering; (iii) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years; or (iv) the last day of the fiscal year in which we are deemed to be a large accelerated filer under the rules of the SEC, which means the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior June 30th.

We are also a “smaller reporting company” as defined in the Exchange Act of 1934, as amended, or the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies until the fiscal year following the determination that our voting and non-voting common stock held by non-affiliates is more than \$250 million measured on the last business day of our second fiscal quarter, or our annual revenues are more than \$100 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is more than \$700 million measured on the last business day of our second fiscal quarter.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks referenced below and described in the documents incorporated by reference into this prospectus and any prospectus supplement, as well as other information we include or incorporate by reference into this prospectus and any applicable prospectus supplement, before making an investment decision. Our business, financial condition or results of operations could be materially adversely affected by the materialization of any of these risks. The trading price of our securities could decline due to the materialization of any of these risks, and you may lose all or part of your investment. This prospectus and the documents incorporated herein by reference also contain forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks described in the documents incorporated herein by reference, including (i) our Annual Report on Form 10-K for the year ended December 31, 2020, which is on file with the SEC and is incorporated herein by reference, (ii) our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 and (iii) other documents we file with the SEC that are deemed incorporated by reference into this prospectus.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, contains or incorporates statements that constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. Any express or implied statements that do not relate to historical or current facts or matters are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “may,” “will,” “could,” “should,” “expects,” “intends,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “projects,” “seeks,” “endeavor,” “potential,” “continue” and similar expressions or the negative of these terms or other comparable terminology. Forward-looking statements appear in a number of places in this prospectus, and the documents incorporated by reference herein, and include, but are not limited to, statements about:

- the timing and the success of clinical trials of MGTA-145 and any other product candidates;
- the outcomes of our preclinical studies, including of MGTA-117;
- our ability to enroll patients in our clinical trials at the pace that we project;
- whether the results of our trials will be sufficient to support domestic or foreign regulatory approvals for MGTA-145 or any other product candidates we may develop;
- our ability to establish clinical programs moving forward in multiple indications, with a rapidly advancing portfolio and sustainable platform;
- regulatory actions with respect to our product candidates or our competitors’ products and product candidates;
- our ability to obtain, including on an expedited basis, and maintain regulatory approval of MGTA-145 or any other product candidates we may develop;
- the level of expenses related to any of our product candidates or clinical development programs;
- our expectation that our existing capital resources will be sufficient to enable us to fund our planned development of MGTA-145 and any other product candidates we may identify and pursue;
- the benefits of the use of MGTA-145 or any other product candidate, if approved;
- our ability to successfully commercialize MGTA-145 or any other product candidates we may identify and pursue, if approved;
- our ability to successfully find collaborators for E478 or any of our current and future programs and product candidates;
- the rate and degree of market acceptance of MGTA-145 or any other product candidates we may identify and pursue;
- our ability to obtain orphan drug designation for any of our product candidates we may identify and pursue;
- our expectations regarding government and third-party payor coverage and reimbursement;
- our ability to manufacture MGTA-145, MGTA-117 or any other product candidate in conformity with the U.S. Food and Drug Administration’s requirements and to scale up manufacturing of our product candidates to commercial scale, if approved;
- our ability to successfully build a specialty sales force and commercial infrastructure;
- our ability to compete with companies currently producing or engaged in the clinical development of treatments for the disease indications that we pursue and treatment modalities that we develop;
- our reliance on third parties to conduct our clinical trials;

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- our reliance on third-party contract manufacturers to manufacture and supply our product candidates for us;
- our ability to retain and recruit key personnel;
- our ability to obtain and maintain intellectual property protection for MGTA-145 or any other product candidates we may identify and pursue;
- our estimates of our expenses, ongoing losses, future revenue, capital requirements and our needs for or ability to obtain additional financing;
- our expectations regarding the time during which we will continue to be an emerging growth company or smaller reporting company as defined in federal securities regulations;
- our financial performance; and
- developments and projections relating to our competitors or our industry.

Although we believe that the expectations reflected in these forward-looking statements are reasonable, these statements relate to our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans, objectives of management and expected market growth, and involve known and unknown risks, uncertainties and other factors including without limitation, risks, uncertainties and assumptions regarding the continuing impact of the novel coronavirus, or COVID-19, pandemic on our business, operations, strategy, goals and anticipated timelines, our ongoing and planned preclinical activities, our ability to initiate, enroll, conduct or complete ongoing and planned clinical trials, our timelines for regulatory submissions and our financial position that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. You are urged to carefully review the disclosures we make concerning these risks and other factors that may affect our business and operating results throughout this prospectus and the risk factors and cautionary statements described in other documents that we file from time to time with the SEC, specifically under “Item 1A. Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K for the year ended December 31, 2020, our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 and in our other reports filed with the SEC, which disclosures are incorporated herein by reference. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this document. The Company does not intend, and undertakes no obligation, to update any forward-looking information to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events, unless required by law to do so.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of the shares offered by this prospectus. The selling stockholders will receive all of the proceeds from this offering.

SELLING STOCKHOLDERS

We are registering the resale of 9,599,998 shares of common stock held by the selling stockholders identified below, to permit each of them, or their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part, to resell or otherwise dispose of these shares in the manner contemplated under the section entitled “Plan of Distribution” in this prospectus (as may be supplemented and amended).

The selling stockholders may sell some, all or none of their shares. We do not know how long the selling stockholders will hold the shares before selling them, and we currently have no agreements, arrangements or understandings with the selling stockholders regarding the sale or other disposition of any of the shares. The shares covered hereby may be offered from time to time by the selling stockholders. As a result, we cannot estimate the number of shares of our common stock each of the selling stockholders will beneficially own after termination of sales under this prospectus. In addition, each of the selling stockholders may have sold, transferred or otherwise disposed of all or a portion of its shares of our common stock since the date on which it provided information for the table below.

The following table provides information regarding the selling stockholders and the number of shares each selling stockholder is offering under this prospectus. We have prepared this table based on information furnished to us by or on behalf of the selling stockholders. Under the rules of the SEC, beneficial ownership includes shares over which the indicated beneficial owner exercises voting or investment power. Beneficial ownership is determined under Section 13(d) of the Exchange Act and generally includes voting or investment power with respect to securities, including any securities that grant a selling stockholder the right to acquire common stock within 60 days of June 15, 2021. Unless otherwise indicated in the footnotes below, we believe that the selling stockholders have sole voting and investment power with respect to all shares beneficially owned. The percentage ownership data is based on 58,508,735 shares of our common stock issued and outstanding as of June 15, 2021. The number of shares of common stock beneficially owned by the selling stockholders is based on information provided by the selling stockholders as of June 15, 2021. Since June 15, 2021, the selling stockholders may have sold, transferred or otherwise disposed of shares of our common stock in transactions exempt from the registration requirements of the Securities Act.

<u>Name of Selling Stockholder(1)</u>	<u>Shares</u>	<u>Shares</u>	<u>Shares Beneficially Owned</u>	
	<u>Beneficially</u>	<u>Offered</u>	<u>Number</u>	<u>Percentage</u>
	<u>Owned Before</u>	<u>Hereby(2)</u>		
	<u>Offering</u>			
Deep Track Biotechnology Master Fund, Ltd.(3)	4,155,555	4,155,555	—	—
TCG Crossover Fund I, L.P.(4)	2,222,222	2,222,222	—	—
Entities associated with Great Point Partners, LLC (5)	1,111,111	1,111,111	—	—
The Biotech Growth Trust PLC(6)	2,060,159	1,111,111	949,048	—
Entities affiliated with Casdin Capital LLC(7)	3,346,035	555,555	2,790,480	4.77%
Janus Henderson Biotech Innovation Master Fund Limited(8)	609,713	444,444	165,269	*

* Represents beneficial ownership of less than 1% of our outstanding common stock.

(1) If required, information about other selling stockholders, except for any future transferees, pledgees, donees or successors-in-interest of the selling stockholders named in the table above, will be set forth in a prospectus supplement or post-effective amendment to the registration statement of which this prospectus is a part. Additionally, post-effective amendments to the registration statement will be filed to disclose any material changes to the plan of distribution from the description contained in this prospectus.

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- (2) Assumes sale of all shares available for resale under this prospectus and no further acquisitions of shares by the selling stockholders.
- (3) Voting and dispositive power for these shares is shared by Deep Track Capital, LP, Deep Track Biotechnology Master Fund, Ltd. and David Kroin. The address for Deep Track Capital, LP is 200 Greenwich Ave., 3rd Floor, Greenwich, Connecticut 06830. The address for Deep Track Biotechnology Master Fund, Ltd. is c/o Walkers Corporate Limited, 190 Elgin Ave, George Town, KY1-9001, Cayman Islands. The address for David Kroin is c/o Deep Track Capital, LP, 200 Greenwich Ave, 3rd Floor, Greenwich, Connecticut 06830.
- (4) TCG Crossover GP, LLC (“TCG Crossover”) is the investment manager of TCG Crossover Fund I, L.P. and may be deemed to have sole voting and dispositive power over the shares held by TCG Crossover Fund I, L.P. The address of these entities is 228 Hamilton Avenue, 3rd Floor, Palo Alto, California 94301.
- (5) Includes (i) 558,889 shares of common stock held by BioMedical Value Fund, L.P. (“BMVF”) and (ii) 552,222 shares of common stock held by BioMedical Offshore Value Fund, Ltd (“BOVF”). Great Point Partners, LLC (“Great Point”) is the investment manager of each of BMVF and BOVF, and may be deemed to have sole voting and dispositive power over the shares held by each of BMVF and BOVF. Each of Dr. Jeffrey R. Jay, M.D., as senior managing member of Great Point, and Tavi Yehudai, as managing director of Great Point, may be deemed to have shared voting and dispositive power over the shares held by each of BMVF and BOVF. The address of Great Point is 165 Mason Street, 3rd Floor, Greenwich, Connecticut 06830.
- (6) OrbiMed Capital LLC (“OrbiMed Capital”) is the portfolio manager of The Biotech Growth Trust PLC (“BIOG”). OrbiMed Capital exercises investment and voting power through a management committee comprised of Carl L. Gordon, Sven H. Borho and Jonathan T. Silverstein, each of whom disclaims beneficial ownership of the shares held by BIOG, except to the extent of its or his pecuniary interest therein, if any. The address of these entities is c/o OrbiMed Advisors LLC, 601 Lexington Avenue, 54th Floor, New York, New York 10022.
- (7) The shares reflected as beneficially owned by entities associated with Casdin Capital LLC in the table above consist of (i) 3,042,913 shares of common stock held by Casdin Partners Master Fund, L.P. and (ii) 303,122 shares of common stock held by Casdin Venture Opportunities Fund, L.P. Shares of common stock held directly by Casdin Partners Master Fund, L.P. may be deemed to be indirectly beneficially owned by (i) Casdin Capital LLC, the investment adviser to Casdin Partners Master Fund, L.P., (ii) Casdin Partners GP, LLC, the general partner of Casdin Partners Master Fund L.P., and (iii) Eli Casdin, the managing member of Casdin Capital, LLC and Casdin Partners GP, LLC. Shares of common stock held directly by Casdin Venture Opportunities Fund, L.P. may be deemed to be indirectly beneficially owned by (i) Casdin Capital LLC, the investment adviser to Casdin Venture Opportunities Fund, L.P., (ii) Casdin Venture Opportunities Fund GP, LLC, the general partner of Casdin Venture Opportunities Fund, L.P., and (iii) Eli Casdin, the managing member of Casdin Capital, LLC and Casdin Venture Opportunities Fund GP, LLC. Each of Casdin Capital, LLC, Casdin Partners GP, LLC, Casdin Venture Opportunities Fund GP, LLC and Eli Casdin disclaims beneficial ownership of such securities except to the extent of its or their respective pecuniary interest therein. The address for each entity and individual identified in this footnote is 1350 Avenue of the Americas, Suite 2600, New York, New York 10019.
- (8) The shares may be deemed to be beneficially owned by Janus Capital Management LLC (“Janus”), an investment adviser registered under the Investment Advisers Act of 1940, who acts as investment adviser for Janus Henderson Biotech Innovation Master Fund Limited (“JHBIF”) and has the ability to make decisions with respect to the voting and disposition of the shares. Under the terms of its management contract with JHBIF, Janus has overall responsibility for directing the investments of JHBIF in accordance with its investment objective, policies and limitations. JHBIF has one or more portfolio managers appointed by and serving at the pleasure of Janus to make decisions with respect to the voting and disposition of the shares. The address of each of JHBIF and Janus is 151 Detroit Street, Denver, Colorado 80206.

Relationship with Selling Stockholders

On May 12, 2021, we entered into the Securities Purchase Agreement with the selling stockholders, pursuant to which, on May 14, 2021, we sold shares of common stock to the selling stockholders in the Private Placement. Under the terms of the Securities Purchase Agreement, we agreed to prepare and file, within 45 days after the closing of the Private Placement, one or more registration statements with the SEC to register for resale the shares of our common stock issued under the Securities Purchase Agreement, and generally to cause the applicable registration statement(s) to become effective as soon as practicable and in any event within 60 days from the filing of the applicable registration statement with the SEC. None of the selling stockholders or any persons having control over such selling stockholders has held any position or office with us or our affiliates within the last three years or has had a material relationship with us or any of our predecessors or affiliates within the past three years, other than as a result of the ownership of our shares or other securities.

PLAN OF DISTRIBUTION

We are registering the shares of common stock issued to the selling stockholders to permit the resale of these shares of common stock by the holders of the shares of common stock from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling stockholders may sell all or a portion of the shares of common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. The selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(a)(1) under the Securities Act, if available, rather than under this prospectus, provided that they meet the criteria and conform to the requirements of those provisions.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2121.

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In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and if such short sale shall take place after the date that the registration statement, of which this prospectus forms a part, is declared effective by the SEC, the selling stockholders may deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the selling stockholders have been advised that they may not use shares registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the SEC.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors-in-interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of common stock in other circumstances, subject to the terms of the Securities Purchase Agreement, in which case the transferees, donees, pledgees or other successors-in-interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer or agents participating in the distribution of the shares of common stock may be deemed to be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(a)(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act.

Each selling stockholder has informed us that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the common stock. Upon being notified in writing by a selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, we will file a supplement to this prospectus, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such selling stockholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of common stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus and (vi) other facts material to the transaction.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

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There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the shelf registration statement, of which this prospectus forms a part.

Each selling stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act, and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholder and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

We will pay all expenses of the registration of the shares of common stock pursuant to the Securities Purchase Agreement, including, without limitation, SEC filing fees and expenses of compliance with state securities or “blue sky” laws; provided, *however*, that each selling stockholder will pay all underwriting discounts and selling commissions, if any, and any legal expenses incurred by it. We will indemnify the selling stockholders against certain liabilities, including some liabilities under the Securities Act, in accordance with a Securities Purchase Agreement, or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus, in accordance with the Securities Purchase Agreement, or we may be entitled to contribution.

DESCRIPTION OF COMMON STOCK

The following description of our common stock, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the common stock that we may offer under this prospectus. The following description of our common stock does not purport to be complete and is subject to, and qualified in its entirety by, our amended and restated certificate of incorporation, which we refer to as our charter, and amended and restated by-laws, which we refer to as our by-laws, each of which are exhibits to the registration statement of which this prospectus forms a part, and the applicable provisions of Delaware law.

Authorized Capital Stock

Our authorized capital stock consists of 150,000,000 shares of common stock, par value \$0.001 per share, and 10,000,000 shares of preferred stock, par value \$0.001 per share.

Common Stock

All outstanding shares are fully paid and non-assessable. When we issue shares of common stock under this prospectus, the shares will fully be paid and non-assessable and will not have, or be subject to, any preemptive or similar rights.

Dividends

Holders of our common stock are entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding.

Voting

Holders of our common stock are entitled to one vote for each share of our common stock held of record for the election of directors and on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights.

Distributions on Liquidation

In the event of our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Other Rights

Holders of our common stock have no preemptive, subscription, redemption or conversion rights and no sinking fund provisions are applicable to our common stock.

Relationship to Preferred Stock

Under our charter, our board of directors is authorized, without further action by the stockholders, to designate and issue up to an aggregate of 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the

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number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of our common stock. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation.

The purpose of authorizing our board of directors to issue preferred stock in one or more series and determine the number of shares in the series and its rights, preferences, privileges and restrictions is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of delaying, deferring or preventing a change in control of our company, as further discussed below under “—Anti-Takeover Effects of Delaware Law and Provisions of our Charter and our By-laws—Undesignated Preferred Stock.”

Registration Rights

Certain of our stockholders hold registration rights pursuant to (i) the Securities Purchase Agreement, and (ii) our Second Amended and Restated Investors’ Rights Agreement, dated as of April 2, 2018, with certain of our stockholders, including our principal stockholders and their affiliates, which we refer to as the Investors’ Rights Agreement.

Securities Purchase Agreement

Pursuant to the terms of the Securities Purchase Agreement, we agreed to prepare and file, within 45 days after the closing of the Private Placement, one or more registration statements with the SEC to register for resale the shares of our common stock issued under the Securities Purchase Agreement, and generally to cause the applicable registration statement(s) to become effective as soon as practicable and in any event within 60 days from the filing of the applicable registration statement with the SEC.

Investors’ Rights Agreement

Pursuant to the terms of our Investors’ Rights Agreement, certain of our stockholders are entitled to rights with respect to the registration of their shares under the Securities Act, including demand registration rights, short-form registration rights and piggyback registration rights.

The holders of approximately 12.6 million shares of our common stock outstanding at the time of this prospectus are entitled to the registration rights described below. We refer to these shares collectively as “registrable securities.”

Demand Registration Rights

The holders of our registrable securities are entitled to demand registration rights. Under the terms of the Investors’ Rights Agreement, we will be required, upon the written request of holders of at least 25% of our outstanding registrable securities, to file a registration statement with an anticipated offering amount of at least \$3.0 million and use commercially reasonable efforts to effect the registration of these shares for public resale. We are required to effect up to two registrations pursuant to this provision of the Investors’ Rights Agreement.

Short-Form Registration Rights

The holders of our registrable securities are also entitled to short form registration rights. Pursuant to the Investors’ Rights Agreement, if we are eligible to file a registration statement on Form S-3, upon the written request of holders of at least 10% of our outstanding registrable securities to sell registrable securities with an anticipated aggregate offering amount of at least \$1.0 million, we will be required to use our commercially

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reasonable efforts to effect a registration of such shares. We are required to effect up to two registrations in any twelve month period pursuant to this provision of the Investors' Rights Agreement.

Piggyback Registration Rights

The holders of our registrable securities are also entitled to piggyback registration rights. If we register any of our securities either for our own account or for the account of other security holders, the holders of our outstanding registrable securities are entitled to include their shares in the registration. Subject to certain exceptions contained in the Investors' Rights Agreement, we and the underwriters may limit the number of shares included in the underwritten offering if the underwriters determine that marketing factors require a limitation of the number of shares to be underwritten.

Indemnification

The Investors' Rights Agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expiration of Registration Rights

The registration rights granted under the Investors' Rights Agreement will terminate upon the earlier of (i) a deemed liquidation event, as defined in our charter, (ii) at such time after our initial public offering when all registrable securities could be sold under Rule 144 of the Securities Act or a similar exemption without limitation during a three-month period without registration or (iii) the fifth anniversary of our initial public offering.

Anti-Takeover Effects of Delaware Law and Provisions of our Charter and our By-laws

Certain provisions of the Delaware General Corporation Law and of our charter and our by-laws could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids and, as a consequence, they might also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions are also designed in part to encourage anyone seeking to acquire control of us to first negotiate with our board of directors. These provisions might also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders might otherwise deem to be in their best interests. However, we believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Delaware Anti-Takeover Statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

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- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or
- at or after the time the stockholder became interested, the business combination was approved by our board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, lease, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Choice of Forum

Our by-laws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for state law claims for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of or based on a breach of a fiduciary duty owed by any of our current or former directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim against us or any of our current or former directors, officers, employees or stockholders arising pursuant to any provision of the Delaware General Corporation Law, our charter or our by-laws, or (iv) any action asserting a claim governed by the internal affairs doctrine, which we refer to herein as the “Delaware Forum Provision.” The Delaware Forum Provision will not apply to any causes of action arising under the Securities Act and the Exchange Act. Our by-laws further provide that the U.S. District Court for the District of Massachusetts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, which we refer to herein as the “Federal Forum Provision.” We have chosen the U.S. District Court for the District of Massachusetts as the exclusive forum for such Securities Act causes of action because our principal executive offices are located in Cambridge, Massachusetts. In addition, our by-laws provide that any person or entity purchasing or otherwise acquiring any interest in any shares of our common stock is deemed to have notice of and consented to the foregoing Delaware Forum Provision and the Federal Forum Provision.

On December 19, 2018, the Court of Chancery of the State of Delaware issued a decision in *Sciabacucchi v. Salzberg*, C.A. No. 2017-0931-JTL (Del. Ch.) declaring that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are ineffective and invalid under Delaware law. However, that decision was appealed to the Delaware Supreme Court, and on March 18, 2020, the Delaware

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Supreme Court reversed the Court of Chancery and ruled that such federal forum selection provisions are “facially valid” under Delaware law. In light of the Delaware Supreme Court’s ruling, we intend to enforce the Federal Forum Provision designating the District of Massachusetts as the exclusive forum for Securities Act causes of action.

We recognize that the Delaware Forum Provision and the Federal Forum Provision may impose additional litigation costs on stockholders in pursuing any such claims, particularly if the stockholders do not reside in or near the State of Delaware or the Commonwealth of Massachusetts, as applicable. Additionally, the forum selection clauses in our by-laws may limit our stockholders’ ability to bring a claim in a judicial forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers and employees even though an action, if successful, might benefit our stockholders. The Federal Forum Provision may also impose additional litigation costs on stockholders who assert the provision is not enforceable or invalid. The Court of Chancery of the State of Delaware or the United States District Court for the District of Massachusetts, as applicable, may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

Board Composition and Filling Vacancies

In accordance with our charter, our board is divided into three classes serving staggered three-year terms, with one class being elected each year. Our charter also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of two-thirds or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the affirmative vote of a majority of our directors then in office, even if less than a quorum. The classification of directors, together with the limitations on removal of directors and treatment of vacancies, has the effect of making it more difficult for stockholders to change the composition of our board of directors.

No Written Consent of Stockholders

Our charter provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This requirement may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our by-laws or removal of directors by our stockholders without holding a meeting of stockholders.

Meetings of Stockholders

Our charter and by-laws provide that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our by-laws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance Notice Requirements

Our by-laws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our by-laws specify the requirements as to form and content of all

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stockholders' notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting.

Amendment to our Charter and our By-laws

As required by the Delaware General Corporation Law, any amendment of our charter must first be approved by a majority of our board of directors, and if required by law or our charter, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, board composition, limitation of liability, and the amendment of our charter must be approved by not less than two-thirds of the outstanding shares entitled to vote on the amendment, and not less than two-thirds of the outstanding shares of each class entitled to vote thereon as a class. Our by-laws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the by-laws, and may also be amended by the affirmative vote of at least two-thirds of the outstanding shares entitled to vote on the amendment, or, if our board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

Undesignated Preferred Stock

Our charter provides for 10,000,000 authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Nasdaq Global Market Listing

Our common stock is listed on The Nasdaq Global Market under the symbol "MGTA."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent and registrar's address is 250 Royall Street, Canton, Massachusetts 02021, and its telephone number is (800) 962-4284.

LEGAL MATTERS

Certain legal matters in connection with this offering will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Any underwriters will also be advised about the validity of the securities and other legal matters by their own counsel, which will be named in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Magenta Therapeutics, Inc. as of December 31, 2020 and 2019, and for each of the years then ended, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Exchange Act and, in accordance therewith, file annual, quarterly and special reports, proxy statements and other information with the SEC. These documents may be accessed through the SEC's electronic data gathering, analysis and retrieval system, or EDGAR, via electronic means, including the SEC's home page on the Internet (www.sec.gov). Copies of certain information filed by us with the SEC are also available on our website at www.magentatx.com. The information contained on our website is not incorporated by reference into this prospectus and, therefore, is not part of this prospectus or any accompanying prospectus supplement.

This prospectus is part of a registration statement that we have filed with the SEC. Certain information in the registration statement has been omitted from this prospectus in accordance with SEC rules and regulations. For more detail about us and any securities that may be offered by this prospectus, you may examine the registration statement on Form S-3 and the exhibits filed with it at the locations listed in the previous paragraph. Please be aware that statements in this prospectus referring to a contract or other document are summaries and you should refer to the exhibits that are part of the registration statement for a copy of the contract or document.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is considered to be a part of this prospectus, and the information that we file later with the SEC will automatically update and, where applicable, supersede the information already incorporated by reference. We incorporate by reference the documents listed below that we filed with the SEC:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2020 filed with the SEC on March 3, 2021;
- the information specifically incorporated by reference into our Annual Report on [Form 10-K](#) for the year ended December 31, 2020 from our definitive proxy statement on [Schedule 14A](#) (other than information furnished rather than filed) filed with the SEC on April 21, 2021;
- our Quarterly Report on [Form 10-Q](#) for the quarter ended March 31, 2021 filed with the SEC on May 6, 2021;
- our Current Reports on Form 8-K filed with the SEC on [May 12, 2021](#) (other than information furnished rather than filed), [May 27, 2021](#) and [June 7, 2021](#);
- the description of our common stock contained in our registration statement on [Form 8-A](#) filed with the SEC on June 19, 2018, as updated by [Exhibit 4.3](#) to our Annual Report on Form 10-K for the year ended December 31, 2019 filed with the SEC on March 3, 2020, including any amendments or reports filed for the purposes of updating this description; and
- all future documents filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, including all filings made after the date of the filing of this registration statement and prior to the effectiveness of this registration statement, prior to the termination of the offering of the underlying securities; provided, however, that we are not incorporating by reference any additional documents or information furnished and not filed with the SEC.

Upon request, either orally or in writing, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, a copy of the documents incorporated by reference into this prospectus but not delivered with the prospectus. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus, at no cost by writing us at the following address: Magenta Therapeutics, Inc., 100 Technology Square, Cambridge, Massachusetts 02139.

You should rely only on the information incorporated by reference or provided in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.

9,599,998 Shares



Common Stock

PROSPECTUS

July 12, 2021

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