

PROSPECTUS



36,798,329 SHARES

Common Stock

This prospectus relates to the resale from time to time of up to 36,798,329 shares of common stock, par value \$0.0001 per share, of Eliem Therapeutics, Inc. by the selling stockholders listed on page 7 of this prospectus, including their donees, pledgees, transferees or other successors-in-interest, issued to the selling stockholders in connection with our acquisition of Tenet Medicines, Inc. and our concurrent private placement in June 2024. We are registering these shares on behalf of the selling stockholders, to be offered and sold by them from time to time. We will not receive any proceeds from the sale of the shares offered by this prospectus.

We have agreed to bear all of the expenses incurred in connection with the registration of these shares. The selling stockholders will pay or assume discounts, commissions, fees of underwriters, selling brokers or dealer managers and similar expenses, if any, incurred for the sale of these shares of our common stock.

The selling stockholders identified in this prospectus, or their respective donees, pledgees, transferees or other successors-in-interest, may offer the shares from time to time on terms to be determined at the time of sale through ordinary brokerage transactions or through any other means described in this prospectus under the caption "Plan of Distribution." The shares may be sold at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale or at negotiated prices. For a list of the selling stockholders, see the section entitled "Selling Stockholders" on page 7 of this prospectus.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

Our common stock is listed on the Nasdaq Global Market under the symbol "ELYM." On July 22, 2024, the closing sale price of our common stock on the Nasdaq Global Market was \$8.32 per share. You are urged to obtain current market quotations for our common stock.

We are an "emerging growth company" and a "smaller reporting company" under applicable Securities and Exchange Commission rules and, as such, have elected to comply with certain reduced public company disclosure requirements for this prospectus and future filings.

Investing in our common stock involves significant risks. See "[Risk Factors](#)" beginning on page 4 of this prospectus and in the documents incorporated by reference in this prospectus for a discussion of the factors you should carefully consider before deciding to purchase our common stock.

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.

The date of this prospectus is July 23, 2024.

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You should rely only on the information contained in or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different or additional information. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in this prospectus or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of common stock. Our business, financial condition, results of operations and prospects may have changed materially since such date.

Unless the context otherwise indicates, references in this prospectus to the “Company,” “Eliem,” “we,” “our” and “us” refer, collectively, to Eliem Therapeutics, Inc., a Delaware corporation, and its consolidated subsidiaries.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and in the documents we incorporate by reference. This summary does not contain all of the information you should consider before making an investment decision. You should read this entire prospectus carefully, especially the risks of investing in our common stock discussed under “Risk Factors” beginning on page 4 of this prospectus, along with our consolidated financial statements and notes to those consolidated financial statements and the other information incorporated by reference in this prospectus.

Our Business

We are focused on developing therapeutics for autoimmune-driven inflammatory diseases, including advancing TNT119, an anti-CD19 antibody designed for a broad range of autoimmune diseases, including systemic lupus erythematosus, immune thrombocytopenia and membranous nephropathy. TNT119 is an anti-CD19 antibody designed to achieve broad and deep depletion of pathogenic B-cells with a favorable tolerability profile and convenient dosing regimen with the potential for subcutaneous administration.

Following the closing of our acquisition of Tenet Medicines, Inc. (“Tenet”) in June 2024 (the “Acquisition”), our strategy is to develop TNT119 for a range of autoimmune-mediated diseases, where we believe CD19-targeted approaches have clear biological rationale, where we can potentially achieve clinical proof-of-concept, and where we can introduce product candidates that can be meaningfully differentiated in the market. TNT119’s lead indication is in systemic lupus erythematosus, the most common type of lupus and an autoimmune disease in which the immune system attacks its own tissue, causing widespread inflammation and tissue damage in affected organs including joints, skin, brain, lungs, kidneys and blood vessels. In systemic lupus erythematosus, the underlying pathology involves the production of autoantibodies by autoreactive B cells and the formation of immune complexes that contribute to inflammation and tissue damage. CD19 is a protein expressed on the surface of these B cells, and it plays a role in B cell activation, proliferation and survival. TNT119 is designed to target and deplete CD19-expressing B cells known to produce autoantibodies, thereby providing a novel approach to the potential treatment of systemic lupus erythematosus.

Corporate Information

Our principal mailing address is PMB #117, 2801 Centerville Road 1st Floor, Wilmington, DE 19808-1609. Our workforce is currently working remotely, and we do not currently have a physical office in the United States. Our telephone number is 1-877-ELIEMTX (354-3689). Our website is www.eliemtx.com. Information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Acquisition and Private Placement

On June 27, 2024, we completed the Acquisition of Tenet. The Acquisition was effected in accordance with the terms of an Agreement and Plan of Merger and Reorganization (the “Acquisition Agreement”), dated as of April 10, 2024, by and among us, Tango Merger Sub, Inc., a Delaware corporation and our wholly owned subsidiary (“Transitory Subsidiary”), Tenet, and, solely in his capacity as Tenet equityholder representative, Stephen Thomas, providing for the acquisition of Tenet by us through the merger of Transitory Subsidiary into Tenet, with Tenet surviving as our wholly owned subsidiary. At the closing of the Acquisition, we issued an aggregate of 5,560,047 shares of our common stock to Tenet equityholders.

Concurrently with the execution of the Acquisition Agreement, certain of the selling stockholders entered into lock-up agreements pursuant to which, subject to specified exceptions, they agreed not to transfer their shares of common stock issued in connection with the Acquisition for the 180-day period following the closing of the Acquisition.

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On June 27, 2024, immediately following the closing of the Acquisition, we issued and sold 31,238,282 shares of our common stock at a price of \$3.84 per share in a private placement to several accredited institutional investors pursuant to a Securities Purchase Agreement, dated as of April 10, 2024 (the “Securities Purchase Agreement”), by and among us and certain of the selling stockholders.

For a detailed description of the transactions with the selling stockholders contemplated by the Acquisition Agreement and the Securities Purchase Agreement and the securities issued pursuant thereto, see the section entitled “Selling Stockholders” in this prospectus. We filed the registration statement on Form S-3, of which this prospectus forms a part, to fulfill our contractual obligations under a registration rights agreement we entered into with certain of the selling stockholders and to provide for the resale by the selling stockholders of the shares of common stock offered hereby.

THE OFFERING

Common Stock Offered by Selling Stockholders	36,798,329 shares.
Use of Proceeds	We will not receive any proceeds from the sale of shares in this offering.
Risk Factors	You should read the “Risk Factors” section of this prospectus and in the documents incorporated by reference in this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
Nasdaq Global Market Symbol	“ELYM”

RISK FACTORS

Investing in our common stock involves significant risks. Before deciding whether to invest in our common stock, you should carefully consider the risks and uncertainties described under the section entitled “Risk Factors” in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q, Exhibit 99.3 to our Current Report on Form 8-K filed with the Securities and Exchange Commission (the “SEC”) on June 27, 2024 and other filings we make with the SEC from time to time, which are incorporated by reference herein in their entirety, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future, together with the other information in this prospectus and in the documents incorporated by reference in this prospectus. The occurrence of any such risks, or of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, could cause our business, prospects, operating results and financial condition to suffer materially. In such event, the trading price of our common stock could decline, and you might lose all or part of your investment.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the information incorporated by reference in this prospectus include “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). All statements, other than statements of historical fact, contained in or incorporated by reference in this prospectus, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “predict,” “project,” “target,” “potential,” “would,” “could,” “should,” “continue” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Any forward-looking statements in this prospectus reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. 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. Actual results or events could differ materially from the plans, intentions and expectations described in the forward-looking statements we make. You are cautioned that these forward-looking statements are subject to risks, uncertainties and assumptions that are referenced in the sections entitled “Risk Factors” in this prospectus and in the documents incorporated by reference herein.

You should read this prospectus and the information incorporated by reference herein completely and with the understanding that our actual future results may be materially different from what we expect. The forward-looking statements contained in this prospectus are made as of the date of this prospectus, and 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.

A statement contained in a document incorporated by reference into this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, any prospectus supplement or in any other subsequently filed document which is also incorporated in this prospectus modifies or replaces such statement. Any statements so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

This prospectus incorporates by reference statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. All of the market data used in this prospectus and the information incorporated by reference herein involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such data. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. Our estimates of the potential market opportunities for our product candidate include several key assumptions based on our industry knowledge, industry publications, third-party research and other surveys, which may be based on a small sample size and may fail to accurately reflect market opportunities. While we believe that our internal assumptions are reasonable, no independent source has verified such assumptions.

USE OF PROCEEDS

We are filing the registration statement of which this prospectus forms a part to permit the holders of the shares of our common stock described in the section entitled “Selling Stockholders” to resell such shares. We are not selling any shares under this prospectus, and we will not receive any proceeds from the sale or other disposition of shares of our common stock held by the selling stockholders and offered hereby.

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

SELLING STOCKHOLDERS

On April 10, 2024, we entered into an Agreement and Plan of Merger and Reorganization, dated as of April 10, 2024 (the “Acquisition Agreement”), by and among us, Tango Merger Sub, Inc., a Delaware corporation and our wholly owned subsidiary (“Transitory Subsidiary”), Tenet Medicines, Inc. (“Tenet”), and, solely in his capacity as Tenet equityholder representative, Stephen Thomas, providing for the acquisition of Tenet by us through the merger of Transitory Subsidiary into Tenet, with Tenet surviving as our wholly owned subsidiary (the “Acquisition”). On June 27, 2024, we completed the Acquisition in accordance with the terms of the Acquisition Agreement, and we issued an aggregate of 5,560,047 shares of our common stock to Tenet equityholders as consideration for our acquisition of Tenet.

On April 10, 2024, we also entered into a securities purchase agreement (the “Securities Purchase Agreement”), with certain of the selling stockholders (the “PIPE Investors”), pursuant to which we agreed to issue and sell an aggregate of 31,238,282 shares of our common stock at a price of \$3.84 per share in a private placement (the “Private Placement”), contingent upon, among other things, the closing of the Acquisition. The Private Placement was completed immediately following the closing of the Acquisition on June 27, 2024.

In connection with the Private Placement, on April 10, 2024, we entered into a registration rights agreement (the “Registration Rights Agreement”) with the PIPE Investors, pursuant to which we agreed to file a registration statement with the SEC covering the resale of the shares of common stock sold in the Private Placement. We agreed to file such registration statement within 45 days following the closing of the Private Placement. The Registration Rights Agreement includes customary indemnification rights in connection with the registration statement providing for the resale of such shares. Pursuant to the Acquisition Agreement, the Tenet equityholders who received stock consideration in the Acquisition could elect to become a party to the Registration Rights Agreement. We refer to both the PIPE Investors and the former Tenet equityholders as selling stockholders in this prospectus. The registration statement of which this prospectus forms a part has been filed in accordance with the Registration Rights Agreement.

The foregoing summary descriptions of the Acquisition Agreement, the Securities Purchase Agreement and the Registration Rights Agreement do not purport to be complete and are qualified in their entirety by reference to the full text of such documents, which were filed as exhibits to the registration statement of which this prospectus forms a part and are incorporated by reference herein.

The table below sets forth, to our knowledge, information concerning the beneficial ownership of shares of our common stock by the selling stockholders as of June 30, 2024. The information in the table below with respect to the selling stockholders has been obtained from the respective selling stockholders. When we refer to the “selling stockholders” in this prospectus, we mean the selling stockholders listed in the table below as offering shares, as well as their respective donees, pledgees, transferees or other successors-in-interest. The selling stockholders may sell all, some or none of the shares of common stock subject to this prospectus. See “Plan of Distribution.”

In the table below, the number of shares of common stock beneficially owned prior to the offering for each selling stockholder includes (i) all shares of common stock held by such selling stockholder as of June 30, 2024, (ii) all shares of common stock such selling stockholder has the right to acquire within 60 days of June 30, 2024, (iii) all shares of common stock acquired by such selling stockholder in the Acquisition and (iv) all shares of common stock purchased by such selling stockholder in the Private Placement. The percentages of shares owned before and after the offering are based on 66,785,449 shares of common stock outstanding as of June 30, 2024, which includes the outstanding shares of common stock offered by this prospectus. In computing the number of shares of common stock beneficially owned by a selling stockholder and the percentage ownership of that selling stockholder, we deemed outstanding shares of common stock that such selling stockholder has a right to acquire within 60 days of June 30, 2024. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other selling stockholder.

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Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our common stock. Unless otherwise indicated below, to our knowledge, each selling stockholder named in the table has sole voting and investment power with respect to the shares of common stock beneficially owned by it, except to the extent authority is shared by spouses under applicable law. Unless otherwise indicated below, the address of each beneficial owner listed below is c/o Eliem Therapeutics, PMB #117, 2801 Centerville Road 1st Floor, Wilmington, DE 19808-1609. The inclusion of any shares in this table does not constitute an admission of beneficial ownership for any selling stockholder named below.

Name of Selling Stockholder	Shares of Common Stock Beneficially Owned Prior to Offering		Number of Shares of Common Stock Being Offered	Shares of Common Stock to be Beneficially Owned After Offering (1)	
	Number	Percentage		Number	Percentage
Entities affiliated with RA Capital (2)	31,459,267	47.1%	18,268,418	13,190,849	19.7%
Entities affiliated with Pontifax (3)	5,206,380	7.8%	5,206,380	—	—
Deep Track Biotechnology Master Fund, Ltd. (4)	3,904,785	5.8%	3,904,785	—	—
Janus Henderson Biotech Innovation Master Fund Limited (5)	3,253,988	4.9%	3,253,988	—	—
Samsara BioCapital, LP (6)	3,261,393	4.9%	3,261,393	—	—
Boxer Capital, LLC (7)	2,603,190	3.9%	2,603,190	—	—
Stephen Basil Thomas (8)	103,907	*	103,907	—	—
William Daley Bonificio (9)	103,907	*	103,907	—	—
Naveen Manu Daryani (10)	92,361	*	92,361	—	—

* Less than one percent.

- (1) We do not know when or in what amounts a selling stockholder may offer shares for sale. The selling stockholders might not sell any or might sell all of the shares offered by this prospectus. Because the selling stockholders may offer all or some of the shares pursuant to this offering, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares, we cannot estimate the number of the shares that will be held by the selling stockholders after completion of the offering. However, for purposes of this table, we have assumed that, after completion of the offering, none of the shares covered by this prospectus will be held by the selling stockholders.
- (2) Consists of (i) 2,479,872 shares of common stock issued to Sera Medicines, LLC (“Sera Medicines”) in connection with the closing of the Acquisition; (ii) 23,521,757 shares of common stock held by RA Capital Healthcare Fund, L.P. (“RA Healthcare”), which consists of 973,000 shares of common stock issued in connection with the closing of the Acquisition and 11,949,171 shares of common stock issued in the Private Placement; (iii) 1,226,497 shares of common stock held by RA Capital Nexus Fund, L.P. (“Nexus Fund”); (iv) 841,087 shares of common stock held by a separately managed account (the “Account”); (v) 483,679 shares of common stock held by RA Capital Nexus Fund II, L.P. (“Nexus Fund II”); (vi) 2,866,375 shares of common stock held by RA Capital Nexus Fund III, L.P. (“Nexus Fund III”), which consists of 1,807,000 shares of common stock issued in connection with the closing of the Acquisition and 1,059,375 shares of common stock issued in the Private Placement and (vii) 40,000 shares of common stock issuable pursuant to stock options held by Andrew Levin, our Executive Chairman and a member of our board of directors, for the benefit of RA Capital Management, L.P. (“RACM”) that are exercisable within 60 days of June 30, 2024. Sera Medicines is controlled by RACM, and RA Healthcare and Nexus Fund III collectively own approximately 81% of the outstanding equity interests of Sera Medicines. RACM is the investment manager for RA Healthcare, Nexus Fund, the Account, Nexus Fund II, and Nexus Fund III. The general partner of RACM is RA Capital Management GP, LLC. The general partner of RA Healthcare is RA Capital Healthcare Fund GP, LLC. The general partner of Nexus Fund is RA Capital Nexus Fund GP, LLC. The general partner of Nexus Fund II is RA Capital Nexus Fund II GP, LLC. The general partner of Nexus Fund III is RA Capital Nexus Fund III GP, LLC. Dr. Peter Kolchinsky and Mr. Rajeev Shah are the managing members of RA Capital Management GP, LLC, RA Capital Healthcare Fund GP, LLC, RA Capital Nexus Fund GP, LLC, RA Capital Nexus Fund II GP, LLC and RA Capital Nexus Fund III GP, LLC and have the

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power to vote or dispose of the shares held by Sera Medicines, RA Healthcare, Nexus Fund, Account, Nexus Fund II and Nexus Fund III. The address of the persons and entities listed above is 200 Berkeley Street, 18th Floor, Boston, Massachusetts 02116.

- (3) Consists of (i) 3,312,625 shares of common stock issued to Pontifax (Israel) VI L.P. in the Private Placement and (ii) 1,893,755 shares of common stock issued to Pontifax (Cayman) VI L.P. in the Private Placement. The General Partner of Pontifax (Israel) VI L.P. and Pontifax (Cayman) VI L.P. is Pontifax VI GP L.P. The General Partner of Pontifax VI GP L.P. is Pontifax Management IV GP (2015) Ltd. Mr. Tomer Kariv and Mr. Ran Nussbaum are the managing members of the Partnerships. The address of the persons and entities listed above is 14 Shenkar Street, Herzlia 46725, Israel.
- (4) Consists of 3,904,785 shares of common stock issued to Deep Track Biotechnology Master Fund, Ltd. (“Deep Track Fund”) in the Private Placement. Deep Track Capital, LP (“Deep Track Manager”) is the investment manager of Deep Track Fund. Deep Track Capital GP, LLC (“Deep Track Partner”) is the general partner of Deep Track Manager and David Kroin is the managing member of Deep Track Partner. The address of each of Deep Track Fund, Deep Track Manager, Deep Track Partner and Mr. Kroin is 200 Greenwich Ave, 3rd Floor, Greenwich, Connecticut 06830.
- (5) Consists of 3,253,988 shares of common stock issued to Janus Henderson Biotech Innovation Master Fund Limited in the Private Placement. Such shares may be deemed to be beneficially owned by Janus Henderson Investors US 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 (the “Janus Fund”) and has the ability to make decisions with respect to the voting and deposition of the shares subject to the oversight of the board of directors of the Janus Fund. Under the terms of its management contract with the Janus Fund, Janus has overall responsibility for directing the investments of the Janus Fund in accordance with the Janus Fund’s investment objective, policies and limitations. The Janus Fund has one or more portfolio managers appointed by and serving at the pleasure of Janus who make decisions with respect to the disposition of the shares of common stock offered hereby. The address for Janus is 151 Detroit Street, Denver, CO 80206. The portfolio managers for the Janus Fund are: Andrew Acker, Daniel S. Lyons and Agustin Mohedas.
- (6) Consists of 3,261,393 shares of common stock issued to Samsara Biocapital, LP (“Samsara LP”) in the Private Placement. Samsara BioCapital GP, LLC (“Samsara LLC”) is the general partner of Samsara LP and may be deemed to beneficially own the shares held by Samsara LP. Dr. Srinivas Akkaraju, MD, Ph.D. has voting and investment power over the shares held by Samsara GP and, accordingly, may be deemed to beneficially own the shares held by Samsara LP. Samsara LLC disclaims beneficial ownership in these shares except to the extent of its respective pecuniary interest therein. The address for Samsara LP is 628 Middlefield Road, Palo Alto, CA 94031.
- (7) Consists of 2,603,190 shares of common issued to Boxer Capital, LLC (“Boxer Capital”) in the Private Placement. Boxer Asset Management Inc. is the managing member of Boxer Capital. Joseph C. Lewis is the sole indirect owner of Boxer Asset Management Inc. Boxer Capital, Boxer Asset Management Inc. and Joseph C. Lewis have shared powers to vote (or direct the vote) and/or to dispose (or direct the disposition) of the shares of common stock held by Boxer Capital. Boxer Asset Management Inc. and Joseph C. Lewis disclaim beneficial ownership over the shares of common stock held by Boxer Capital except to the extent of their pecuniary interest therein. The principal address for Boxer Capital is 12860 El Camino Real, Suite 300, San Diego, CA 92130. The principal address for Boxer Asset Management and Mr. Lewis is Cay House, EP Taylor Drive N7776, Lyford Cay, New Providence, Bahamas.
- (8) Consists of 103,907 shares of common stock issued to Dr. Thomas in connection with the closing of the Acquisition. Dr. Thomas was elected to our board of directors in connection with the closing of the Acquisition.
- (9) Consists of 103,907 shares of common stock issued to Dr. Bonificio in connection with the closing of the Acquisition.
- (10) Consists of 92,361 shares of common stock issued to Dr. Daryani in connection with the closing of the Acquisition.

Relationships with Selling Stockholders

RA Capital Management

Andrew Levin, who is our Executive Chairman and a member of our board of directors, is a Partner and Managing Director of RACM, which, with certain of its affiliated funds, is a selling stockholder. Additionally, RACM is affiliated with Sera Medicines, which is a selling stockholder.

RACM is also a party to an investor rights agreement (the “Investor Rights Agreement”), as amended in March 2021, with Eliem and certain other holders of our redeemable convertible preferred stock and common stock. The Investor Rights Agreement provides the holders of our redeemable convertible preferred stock with certain registration rights, including the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing. The registration of shares of our common stock pursuant to the exercise of certain registration rights would enable the holders to sell such shares without restriction under the Securities Act, when the applicable registration statement is declared effective. We have agreed to pay the registration expenses, other than underwriting discounts and commissions, of the shares registered pursuant to certain demand, piggyback and Form S-3 registrations.

Sera Medicines

Sera Medicines was founded on October 1, 2023 by RACM and certain members of Tenet’s management team, including Stephen Thomas, a member of our board of directors, William Bonificio and Naveen Daryani, each of whom are selling stockholders. RACM holds approximately 81% of Sera Medicine’s equity interests and members of Tenet’s management hold approximately 19% of Sera Medicine’s equity interests.

Consulting Agreements

In connection with the closing of the Acquisition, each of Dr. Thomas, Dr. Bonificio and Dr. Daryani entered into a consulting agreement with us. Pursuant to their respective consulting agreements, Dr. Thomas is paid a fixed consulting fee equal to \$10,000 per month, and Dr. Bonificio and Dr. Daryani are paid hourly consulting fees. In addition, each of Dr. Thomas, Dr. Bonificio and Dr. Daryani were paid a transaction bonus in the amount of \$150,000.

Additionally, at the closing of the Acquisition, our board of directors granted to each of Dr. Thomas, Dr. Bonificio and Dr. Daryani 200,750 restricted stock units (“RSUs”), pursuant to our 2021 Equity Incentive Plan. Of the RSUs granted to each of Dr. Thomas, Dr. Bonificio and Dr. Daryani, 100,375 RSUs are subject to time-based vesting with 50% of such RSUs vesting on January 1, 2025, 25% of such RSUs vesting on March 27, 2025 and the remaining 25% of such RSUs vesting on June 27, 2025, subject to continued service. The remaining 100,375 RSUs granted to each of Dr. Thomas, Dr. Bonificio and Dr. Daryani are subject to performance-based vesting and vest subject to the satisfaction of performance conditions, including the achievement of specified operational milestones on or before September 30, 2025.

Dr. Thomas was also elected to our board of directors in connection with the closing of the Acquisition.

Certain Legacy Tenet Relationships

Tenet is a party to a services agreement (the “Blackbird Services Agreement”) with Blackbird, an entity controlled by RACM, a selling stockholder. Under the terms of the Blackbird Services Agreement, Blackbird provides consulting services in connection with Tenet’s clinical trials, including study strategy, clinical operations and patient operations. In consideration for services provided under the Blackbird Services Agreement, Tenet pays Blackbird a yearly service fee of \$360,000.

Tenet is also party to a services agreement (the “Sera Services Agreement”) with Sera Services, Inc. (“Sera Services”), an affiliate of RACM and Sera Medicines, each of which are selling stockholders. Tenet’s clinical

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development and professional services functions, including the services of Tenet's executive officers, are currently performed through Sera Services pursuant to the Sera Services Agreement. Pursuant to the Sera Services Agreement, Tenet compensates Sera Services for the costs associated with clinical development and professional services plus a markup.

PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- 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;
- short sales;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted by applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the 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, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending 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 the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. 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).

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling

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stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

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 of 1933, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions 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.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to use commercially reasonable efforts to cause the registration statement of which this prospectus constitutes a part to become effective and to remain continuously effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with such registration statement and (2) the date on which all of the shares may be sold without restriction pursuant to Rule 144 of the Securities Act.

LEGAL MATTERS

The validity of the shares of our common stock offered hereby has been passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2023 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The financial statements of Tenet Medicines, Inc. as of December 31, 2023 and for the period from November 8, 2023 (inception) to December 31, 2023 incorporated by reference in this prospectus by reference to Eliem Therapeutic, Inc.'s Current Report on Form 8-K dated June 27, 2024 have been audited by Deloitte & Touche LLP, an independent auditor, as stated in their report. Such financial statements are incorporated by reference in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. Copies of certain information filed by us with the SEC are also available on our website at www.eliemtx.com. Our website is not a part of this prospectus and is not incorporated by reference in this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

This prospectus is part of a registration statement we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and our consolidated subsidiaries and our securities. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings and the exhibits attached thereto. You should review the complete document to evaluate these statements. You can obtain a copy of the registration statement from the SEC's website.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below (File No. 001-40708) and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of the initial registration statement and the effectiveness of the registration statement and following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed:

- Our Annual Report on [Form 10-K](#) for the year ended December 31, 2023, filed with the SEC on March 28, 2024, as amended by [Amendment No. 1](#) thereto, filed with the SEC on April 29, 2024;
- Our Quarterly Report on Form 10-Q for the quarterly period ended [March 31, 2024](#), filed with the SEC on May 15, 2024;
- Our Current Reports on Form 8-K, filed with the SEC on [March 19, 2024](#), [April 11, 2024](#), [June 12, 2024](#), [June 26, 2024](#) and [June 27, 2024](#); and
- The description of our common stock contained in our registration statement on [Form 8-A](#), filed with the SEC on August 3, 2021, as the description therein has been updated and superseded by the description of our common stock contained in [Exhibit 4.3](#) to our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on March 7, 2022.

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

Eliem Therapeutics, Inc.
PMB #117
2801 Centerville Road 1st Floor
Wilmington, DE 19808-1609
Attention: Investor Relations
1-877-ELIEMTX (354-3689)



36,798,329 SHARES

COMMON STOCK

PROSPECTUS

July 23, 2024
