

PROSPECTUS

## CAMP4 THERAPEUTICS CORPORATION

# Up to 33,431,131 shares of Common Stock Up to 6,003,758 shares of Common Stock Underlying Pre-Funded Warrants

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This prospectus relates to the resale or other disposition from time to time by the selling stockholders identified in this prospectus, including their transferees, pledgees, donees or successors, of up to (i) 26,717,414 shares of our common stock par value \$0.0001 per share (the “Common Stock”) and (ii) 6,003,758 shares of Common Stock issuable upon the exercise of pre-funded warrants, with an exercise price of \$0.0001 per share (the “2025 Pre-Funded Warrants” and together with the Common Stock, the “Resale Shares”), that we issued in a private placement completed on September 11, 2025 (the “Private Placement”). In addition, we are also registering 6,713,717 shares of Common Stock pursuant to the exercise of piggyback registration rights under the Third Amended and Restated Investors’ Rights Agreement, dated as of June 3, 2022, by and among CAMP4 Therapeutics Corporation and the investors named therein (the “Investors’ Rights Agreement”).

The selling stockholders 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. See “Plan of Distribution” which begins on page 16. We do not know when or in what amount the selling stockholders may dispose of or offer for sale the shares covered by this prospectus.

We are not offering any shares of Common Stock under this prospectus. We will not receive any of the proceeds from the sale of shares of Common Stock by the selling stockholders, except with respect to the amounts received by us upon exercise of the 2025 Pre-Funded Warrants, to the extent such 2025 Pre-Funded Warrants are exercised for cash. All expenses of registration incurred in connection with this offering are being borne by us. The selling stockholders will bear all discounts and commissions, if any, and expenses incurred by them for brokerage, accounting, tax or legal services or any other expenses incurred in their sale of shares of Common Stock.

Our Common Stock is listed on the Nasdaq Global Market under the symbol “CAMP.” On November 24, 2025, the last reported sale price of our Common Stock was \$3.33 per share.

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.

**Investing in our securities involves risks. See “[Risk Factors](#)” on page 3, 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 passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.**

Prospectus dated November 25, 2025

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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 (the “SEC”) using a “shelf” registration or continuous offering process.

You should read this prospectus and the information and documents incorporated by reference carefully. Such documents contain important information you should consider when making your investment decision. See “Where You Can Find More Information” and “Incorporation of Documents by Reference” in this prospectus.

This prospectus may be supplemented from time to time to add, update or change information in this prospectus. Any statement contained in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in such prospectus supplement modifies or supersedes such statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus. Neither we nor the selling stockholders has authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. This prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities, in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus or any prospectus supplement, as well as information we have filed with the SEC that is incorporated by reference, is accurate as of the date on the front of those documents only, regardless of the time of delivery of this prospectus or any applicable prospectus supplement, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “Where You Can Find More Information.”

Unless otherwise stated or the context requires otherwise, references in this prospectus to “CAMP4,” the “company” or the “Company,” “we,” “us,” or “our” refer to CAMP4 Therapeutics Corporation and our subsidiary on a consolidated basis, as appropriate, unless the context otherwise requires.

## PROSPECTUS SUMMARY

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

### Company Overview

We are a clinical-stage biopharmaceutical company pioneering the discovery and development of a new class of RNA-targeting therapeutics with the goal of upregulating gene expression and restoring healthy protein levels to treat a broad range of genetic diseases. Regulatory RNAs (“regRNAs”) play a central role in the regulation of every protein-coding gene by contributing to gene activation and suppression. Our approach is designed to amplify messenger RNA (“mRNA”) expression by harnessing the power of regRNAs that form localized complexes with transcription factors and regulate gene expression. Our proprietary RNA Actuating Platform (“RAP Platform”) allows us to rapidly and systematically identify and characterize the active regulatory elements controlling every expressed gene and tens of thousands of druggable enhancer and promoter regRNA sequences that control protein-coding genes. Once a disease-associated target gene is identified, we apply our RAP Platform to identify the controlling regRNA and rapidly generate novel antisense oligonucleotide (“ASO”) candidates, which we refer to as RNA Actuators. These ASOs are designed to bind to the identified regRNA and amplify the expression of the target gene in a specific and controllable way. We are primarily focused on diseases of the central nervous system with validated disease biology, and we believe our RAP Platform allows us to address a broad range of rare and prevalent genetic diseases in which a modest increase in protein expression has the potential to be clinically meaningful.

We are leveraging our RAP Platform to advance a preclinical program for the treatment of synaptic Ras GTPase activating protein 1 (“SYNGAP1”)–related disorders, a group of neurodevelopmental conditions caused by pathogenic variants in the SYNGAP1 gene that result in a haploinsufficient state, reducing SYNGAP protein levels by up to 50%. SYNGAP plays a critical role in cognitive development and synaptic function. Epilepsy is a common characteristic of these disorders and nearly all patients experience some degree of developmental delay and cognitive impairment. Incidence estimates vary significantly, ranging from one to 40 per 100,000 individuals. While we believe that SYNGAP1-related disorders remain underdiagnosed, we estimate that there are more than 10,000 individuals living with these disorders in the United States. SYNGAP1-related disorders are reported to represent 0.5% to 1.0% of all intellectual disability cases, making them among the most common causes of intellectual disability in patients with epilepsy, and indicating that the patient population may be significantly larger than incidence estimates suggest. There are no FDA-approved, disease-modifying therapies for SYNGAP1-related disorders. Treatment is often limited to supportive physical, occupational and speech therapy. A combination of non-specific anti-seizure medications may be prescribed, though SYNGAP1-related disorders have proven difficult to control with available therapeutics. Up to 50% of patients do not adequately respond to medication, in which case implantable devices, such as those for vagus nerve stimulation, may offer incremental therapeutic benefit. We are advancing our SYNGAP program to address the significant unmet need by targeting the direct cause of SYNGAP1-related disorders, haploinsufficiency, which we believe is amenable to targeting through regRNAs. Our novel approach targets the SYNGAP1 gene at the transcriptional level to restore SYNGAP function and improve symptoms by utilizing an intrathecally delivered ASO. Upregulation of SYNGAP1 gene expression may increase SYNGAP protein levels in amounts sufficient to yield therapeutic benefit. Our preclinical studies demonstrated a dose-dependent increase in SYNGAP mRNA levels accompanied by an increase in SYNGAP protein expression. On May 16, 2025, we presented preclinical data from our SYNGAP program in an oral presentation at the 28th American Society of Gene and Cell Therapy Annual Meeting. We observed that intracerebroventricular injection of our lead development candidate, CMP-002 (formerly known as CMP-SYNGAP-01), restored SYNGAP protein levels to near normal range in haploinsufficient mice carrying a single copy of the human SYNGAP1 gene after a single dose and rescued motor defects and spatial learning defects following two doses. Additionally, we observed that biweekly intrathecal injections of CMP-002 were well tolerated in cynomolgus monkeys and resulted in a significant increase in SYNGAP protein levels across multiple brain regions clinically relevant to the disease, with dose-linear increases of CMP-002 in disease-relevant brain regions. We have initiated GLP toxicology studies for CMP-002 to enable the filing of a clinical trial application. Pending successful completion of GLP toxicology

studies and regulatory clearance, we intend to initiate a global Phase 1/2 clinical trial in individuals with SYNGAP1-related disorders as early as the second half of 2026.

Our pipeline also includes our clinical candidate, CMP-001 (formerly CMP-CPS-001), for the treatment of the most prevalent urea cycle disorders (“UCDs”), for which we have completed a Phase 1 clinical trial in healthy volunteers. UCDs are a group of severe, inherited metabolic diseases caused by mutations in the genes that encode one or more of the eight enzymes and transporters necessary to convert ammonia into urea. The inability of the body to properly metabolize ammonia leads to the accumulation of toxic levels in circulation, ultimately resulting in severe health outcomes, such as neurologic disability, seizure and death. CMP-001 is designed to improve urea cycle activity by amplifying expression of carbamoyl phosphate synthetase 1 (“CPS1”), an enzyme that catalyzes the first step of the urea cycle, by binding to a CPS1-specific regRNA. Our preclinical studies have demonstrated that modulating the activity of the target regRNA increases expression of the CPS1 gene, resulting in increased CPS1 enzyme levels, which allows for more ammonia to be converted into urea, thereby lowering ammonia levels to normal, healthy ranges. These preclinical studies also demonstrated that CMP-001 can increase the level of, or upregulate, the production of multiple enzymes responsible for converting ammonia into urea, potentially allowing us to address more than 85% of patients with UCDs. We have received approval of a clinical trial application in the Netherlands to enable the initiation of a Phase 1b expansion to enroll female participants who are heterozygous for a mutation of the OTC gene. We estimate that there are approximately 2,000 diagnosed female OTC heterozygotes in the United States who have inherited one copy of a gene with OTC-related changes and experience potentially addressable UCD symptoms. We have completed the analysis of safety, pharmacokinetic, and pharmacodynamic biomarker data from all four cohorts of the single ascending dose (“SAD”) portion and from the three completed cohorts of the multiple ascending dose (“MAD”) portion of the clinical trial. In total, 86 healthy volunteer participants were observed, including 51 receiving CMP-001. CMP-001 demonstrated a favorable safety profile in both the SAD and MAD portions of the clinical trial, with no serious adverse events or discontinuations due to adverse events. Pharmacokinetic data similarly was observed to be consistent with expectations, demonstrating a dose-dependent increase in exposure (C<sub>max</sub> and AUC) with clear separation between groups and low-to-moderate variability in key pharmacokinetic parameters at all dose levels. There were no conclusive determinations of pharmacodynamic activity or non-activity in this healthy volunteer population, which we believe may have resulted from intrinsic variability in the ureagenesis rates of healthy individuals measured with the investigational <sup>13</sup>C-sodium acetate test used in the study. We have made the strategic decision to pause new investment in our UCD program and to prioritize the development of our SYNGAP program. We continue to believe that CMP-001 has the potential to be the first disease-modifying therapy for the most prevalent UCDs and intend to pursue partnership opportunities to support the further development of CMP-001.

Our principal executive offices are located at One Kendall Square, Building 1400 West, 3rd Floor, Cambridge, Massachusetts 02139 and our telephone number is (617) 651-8867. Our website address is [www.camp4tx.com](http://www.camp4tx.com). The information contained on, or accessible through, our website is not incorporated by reference into this prospectus. We have included our website in this prospectus solely as an inactive textual reference, and investors should not rely on any such information in deciding whether to purchase our common stock.

## RISK FACTORS

*An investment in our securities involves risks. Prior to making a decision about investing in our securities, you should consider carefully the risks together with all of the other information contained or incorporated by reference in this prospectus, including any risks described in the section entitled "Risk Factors" contained in any supplements to this prospectus, in our Annual Report on Form 10-K for the year ended December 31, 2024 and in our subsequent filings with the SEC. Each of the referenced risks and uncertainties could adversely affect our business, prospects, operating results and financial condition, as well as adversely affect the value of an investment in our securities. Additional risks not known to us or that we believe are immaterial may also adversely affect our business, operating results and financial condition and the value of an investment in our securities.*

### **Risks Related to This Offering**

***The sale of the securities registered for resale hereunder and future sales of substantial amounts of our securities in the public market (including the shares of Common Stock issuable upon the exercise of the 2025 Pre-Funded Warrants), or the perception that such sales may occur, may cause the market price of our Common Stock to decline significantly.***

The Resale Shares represent a substantial percentage of our total outstanding Common Stock as of the date of this prospectus. The Resale Shares being offered for resale in this prospectus represent approximately 69% of our total outstanding Common Stock as of October 1, 2025, assuming the exercise of the 2025 Pre-Funded Warrants into shares of Common Stock without giving effect to beneficial ownership limitations, if any. The sale of the Resale Shares in the public market, or the perception that holders of a large number of securities intend to sell their securities, could significantly reduce the market price of our Common Stock.

We cannot predict if and when the selling stockholders may sell such shares in the public markets. Furthermore, in the future, we may issue additional shares of Common Stock or other equity or debt securities convertible into shares of Common Stock. Any such issuance could result in substantial dilution to our existing stockholders and could cause our stock price to decline.

## DESCRIPTION OF PRIVATE PLACEMENT

On September 9, 2025, the Company entered into a securities purchase agreement (the “Purchase Agreement”) with the selling stockholders named in this prospectus, pursuant to which the Company agreed to sell to the selling stockholders, in the Private Placement, 26,681,053 shares of Common Stock priced at \$1.53 per share, 36,361 shares of Common Stock priced at \$1.65 to certain directors, employees and consultants of the Company, and, in lieu of Common Stock to certain selling stockholders, 2025 Pre-Funded Warrants to purchase 6,003,758 shares of Common Stock at an offering price of \$1.5299 per 2025 Pre-Funded Warrant. The gross proceeds of the Private Placement were approximately \$50.1 million, before deducting placement agent fees and other expenses.

The Company and the selling stockholders entered into a Registration Rights Agreement, dated September 9, 2025 (the “Registration Rights Agreement”), providing for the registration for resale of the shares of our Common Stock and the shares of Common Stock issuable upon exercise of the 2025 Pre-Funded Warrants sold in connection with the Private Placement. The Company agreed to file the registration statement of which this prospectus is a part, registering such shares with the SEC no later than November 10, 2025. The Company has agreed to keep such registration statement continuously effective from the date on which the SEC declares the registration statement to be effective until the earlier of (i) the date on which the selling stockholders shall have resold all the Registrable Securities (as such term is defined in the Registration Rights Agreement) covered thereby and (ii) the date on which the Registrable Securities may be resold by the selling stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144 (“Rule 144”) as promulgated by the SEC under the Securities Act of 1933 (the “Securities Act”) and without current public information pursuant to Rule 144.

## DESCRIPTION OF CAPITAL STOCK

The description of our capital stock is incorporated by reference to Exhibit 4.1 of our Annual Report on Form 10-K for the year ended December 31, 2024, as filed with the SEC on March 27, 2025.

### 2025 Pre-Funded Warrants

The material terms and provisions of the 2025 Pre-Funded Warrants to purchase shares of Common Stock are summarized below. This summary is subject to and qualified in its entirety by the form of pre-funded warrant, which was filed with the SEC as an exhibit to our Current Report on Form 8-K on September 10, 2025.

*Exercisability.* Holders may exercise the 2025 Pre-Funded Warrants at any time or from time to time until exercised in full. As further described under “Selling Stockholders,” notwithstanding the foregoing, certain holders will be prohibited from exercising the 2025 Pre-Funded Warrants into shares of our Common Stock if, as a result of such exercise, the holder, together with its affiliates, would own more than a specific percentage (initially, 4.99% or 9.99%, as determined by the holder) of the total number of shares of our Common Stock then issued and outstanding; provided, however that a holder may from time to time increase or decrease such maximum percentage to any other percentage not in excess of 19.99% by giving 61 days’ notice to the Company (the “Beneficial Ownership Limitation”). The 2025 Pre-Funded Warrants are exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our Common Stock purchased upon such exercise (except in the case of a cashless exercise as discussed below).

*Exercise Price.* The exercise price upon exercise of each 2025 Pre-Funded Warrant is \$0.0001 per share of Common Stock, with an aggregate exercise price of \$1.53 per share of Common Stock, of which \$1.5299 per share of Common Stock was paid by the holders at the closing. The exercise price of the 2025 Pre-Funded Warrants is subject to appropriate adjustment in the event of stock dividends, subdivisions, stock splits, stock combinations, cash distributions, reclassifications, exchanges, combinations or substitutions affecting our Common Stock.

*Payment of Exercise Price.* The 2025 Pre-Funded Warrant holders have the option to provide payment of the exercise price of the shares being acquired upon exercise of the 2025 Pre-Funded Warrants (i) by payment acceptable to us or (ii) by cashless exercise.

*Cashless Exercise.* In lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holders of 2025 Pre-Funded Warrants may elect instead to receive upon such exercise the net number of shares of Common Stock determined according to a formula set forth in the 2025 Pre-Funded Warrant.

*Transferability.* Subject to applicable laws and the restriction on transfer set forth in the 2025 Pre-Funded Warrants, the 2025 Pre-Funded Warrants may be transferred.

*Fundamental Transactions.* Upon the consummation of a fundamental transaction (as described in the 2025 Pre-Funded Warrants, and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our assets, our consolidation or merger with or into another person in which we are not the surviving entity, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power of our outstanding common stock), a holder of the 2025 Pre-Funded Warrants will be entitled to receive, upon exercise of the 2025 Pre-Funded Warrants, the same kind and amount of securities, cash or other property that such holder would have received had they exercised the 2025 Pre-Funded Warrants immediately prior to such fundamental transaction, without regard to any limitations on exercise contained in the 2025 Pre-Funded Warrants.

*Rights as a Stockholder.* Except for the right to participate in certain dividends and distributions and as otherwise provided in the 2025 Pre-Funded Warrants or by virtue of a holder’s ownership of our Common Stock, the holders of the 2025 Pre-Funded Warrants do not have the rights or privileges of holders of our Common Stock, including any voting rights, until they exercise their Pre-Funded Warrants.

*Waivers and Amendments.* No term of the 2025 Pre-Funded Warrants may be amended or waived without the written consent of the holder of such 2025 Pre-Funded Warrants.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This prospectus, any prospectus supplement, any free writing prospectus and the other documents we have filed with the SEC that are incorporated herein by reference, contain forward-looking statements that involve substantial risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. All statements other than statements of historical fact contained in this prospectus, including statements regarding our strategy, future operations, future financial position, prospects, plans, objectives of management and expected growth, are forward-looking statements. These statements are based on our current beliefs, expectations and assumptions regarding our intentions, beliefs or current expectations concerning, among other things, the future of our business, future plans and strategies, our operational results and other future conditions. Forward-looking statements 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 the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “estimate,” “believe,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions intended to identify statements about the future, although not all forward-looking statements contain these identifying words. These forward-looking statements include, without limitation, statements about the following:

- the initiation, timing, progress, results and costs of our research and development programs and of our current and future preclinical studies and clinical trials of our product candidates, including statements regarding the timing of initiation and completion of studies or trials and related preparatory work, as well as the period during which the results of the trials are expected become available;
- the timing of our planned good laboratory practices toxicology studies and regulatory submissions, initiation of planned clinical trials and timing of expected clinical results for our current and future product candidates;
- the timing of any submissions of filings for regulatory approval of, and our ability to obtain and maintain regulatory approvals for, any product candidates we may develop;
- our ability to identify patients with the diseases treated by our product candidates, and to enroll patients in trials;
- our expectations regarding the size of the patient populations, market acceptance and opportunity for and clinical utility of our product candidates, if approved for commercial use;
- our reliance on third party manufacturing partners to comply with significant regulations with respect to manufacturing our products;
- our expectations regarding the scope of any approved indication for any product candidates we may develop;
- our ability to successfully commercialize our product candidates, if approved;
- our ability to leverage our RAP Platform to identify and develop future product candidates;
- our estimates of our expenses, ongoing losses, future revenue, capital requirements and our need for or ability to obtain additional funding before we can expect to generate any revenue from product sales;
- our ability to establish or maintain strategic collaborations or arrangements, including potential business development opportunities and potential licensing partnerships, and our ability to attract collaborators with development, regulatory and commercialization expertise;
- our ability to identify, recruit and retain key personnel;

- our reliance upon intellectual property licensed from third parties and our ability to obtain such licenses on commercially reasonable terms or at all;
- our ability to protect and enforce our intellectual property position for our product candidates, and the scope of such protection;
- our financial performance;
- the sufficiency of our existing cash and cash equivalents to fund our future operating expenses and capital expenditure requirements;
- our competitive position and the development of and projections relating to our competitors or our industry;
- our estimates regarding future expenses and needs for additional financing;
- the impact of laws and regulations;
- the effect of changes in international trade policies and general economic, industry, geopolitical and market conditions, such as uncertainties related to military conflict or war, tariffs (including tariffs that have been or may in the future be imposed by the United States or other countries), sanctions, trade protection measures or other trade barriers, inflation and financial institution instability, or pandemic or epidemic disease outbreaks, many of which are beyond our control, as well as the value of our common stock and our ability to access capital markets; and
- our expectations regarding the time during which we will be an emerging growth company and smaller reporting company under the Jumpstart Our Business Startups Act of 2012.

Although we base these forward-looking statements on assumptions that we believe are reasonable when made, we caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from those made in or suggested by the forward-looking statements contained in this prospectus. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this prospectus, those results or developments may not be indicative of results or developments in subsequent periods.

Given these risks and uncertainties, you are cautioned not to place undue reliance on these forward-looking statements. Any forward-looking statement that we make in this prospectus speaks only as of the date of such statement. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in any forward-looking statements, whether as a result of new information, future events or otherwise. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless specifically expressed as such, and should only be viewed as historical data. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

Unless otherwise indicated, market and industry data contained in this prospectus, including potential market opportunities, is based on our management's estimates and research, as well as industry and general publications and research and studies conducted by third parties. Although we believe that the information from these third-party publications, research and studies included in this prospectus is reliable, and we are responsible for the accuracy of such information, we have not independently verified the accuracy or completeness of this information. Management's estimates are derived from publicly available information, their knowledge of our industry and their assumptions based on such information and knowledge, which we believe to be reasonable. This data involves a number of assumptions and limitations and the industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section "Risk Factors" in this prospectus, in our Annual Report on Form 10-K for the year ended December 31, 2024, and in our subsequent filings with the SEC. These and other factors could cause our future performance to differ materially from our assumptions and estimates.

## **USE OF PROCEEDS**

All of the shares of Common Stock offered by the selling stockholders pursuant to this prospectus will be sold by the selling stockholders for their respective accounts. We will not receive any of the proceeds from these sales.

The selling stockholders will bear all discounts and commissions, if any, and expenses incurred by them for brokerage, accounting, tax or legal services or any other expenses incurred in disposing of the Common Stock. We will bear the costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees, Nasdaq listing fees and fees and expenses of our counsel and our independent registered public accounting firm.

We will receive proceeds from the exercise of the 2025 Pre-Funded Warrants to the extent any are exercised for cash but not from the sale of the shares of Common Stock issuable upon such exercise. If any of the 2025 Pre-Funded Warrants are exercised on a net exercise cashless basis, we would not receive any cash payment from the applicable selling stockholder upon any such exercise. Unless otherwise disclosed in a prospectus supplement, we intend to use any net proceeds from the exercise of 2025 Pre-Funded Warrants to fund the preclinical and clinical development of the Company's SYNGAP1 program, and for working capital and other general corporate purposes.

## SELLING STOCKHOLDERS

Pursuant to the Registration Rights Agreement, we agreed to (i) file the registration statement, of which this prospectus is a part, to cover the resale of the shares of Common Stock and the shares of Common Stock issuable upon exercise of the 2025 Pre-Funded Warrants, which the selling stockholders acquired pursuant to the Purchase Agreement and (ii) to use reasonable best efforts to keep such registration statement continuously effective from the date on which the SEC declares the registration statement to be effective until the earlier of (x) the date on which the selling stockholders shall have resold all the Registrable Securities (as such term is defined in the Registration Rights Agreement) covered thereby, and (y) the date on which the Registrable Securities may be resold by the selling stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144 and without current public information pursuant to Rule 144.

We are registering the resale of the above-referenced securities to permit each of the selling stockholders identified below, 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 the securities in the manner contemplated under “Plan of Distribution” in this prospectus (as may be supplemented and amended). This prospectus covers the sale or other disposition by the selling stockholders of up to the total number of shares of Common Stock that were issued or issuable upon exercise of the 2025 Pre-Funded Warrants issued to the selling stockholders in the Private Placement. Throughout this prospectus, when we refer to the securities being registered on behalf of the selling stockholders, we are referring to the shares of Common Stock or shares of Common Stock issuable upon the exercise of the 2025 Pre-Funded Warrants issued in the Private Placement pursuant to the Purchase Agreement. When we refer to “selling stockholders” in this prospectus, we mean those persons listed in the table below, as well as their permitted transferees, pledgees or donees 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. The selling stockholders may sell some, all or none of their shares of Common Stock. 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 of Common Stock covered hereby may be offered from time to time by the selling stockholders.

The information regarding shares beneficially owned after the offering assumes the sale of all shares of Common Stock offered by the selling stockholders. To our knowledge, subject to community property laws where applicable, each person named in the table has sole voting and investment power with respect to the shares of Common Stock set forth opposite such person’s name.

The following table sets forth the name of each selling stockholder, the number and percentage of shares of Common Stock beneficially owned by the selling stockholders as of October 1, 2025, the number of shares of Common Stock that may be offered under this prospectus, and the number and percentage of Common Stock beneficially owned by the selling stockholders assuming all of the shares of Common Stock registered hereunder are sold. Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to the Common Stock. Generally, a person “beneficially owns” shares of the Common Stock if the person has or shares with others the right to vote those shares or to dispose of them, or if the person has the right to acquire voting or disposition rights within 60 days of October 1, 2025.

The number of shares described under the column “Shares of Common Stock Beneficially Owned Prior to this Offering” for each selling stockholder includes all shares of our Common Stock beneficially held by such selling stockholder as of October 1, 2025, which includes (i) all shares of our Common Stock purchased by such selling stockholder in the Private Placement, (ii) all of the shares of Common Stock issuable upon exercise of the 2025 Pre-Funded Warrants purchased by such selling stockholder in the Private Placement, not reflecting the Beneficial Ownership Limitation and (iii) 6,713,717 shares of Common Stock subject to piggyback registration rights under the Investors’ Rights Agreement. Because each selling stockholder may dispose of all, none or some portion of their shares of Common Stock, no estimate can be given as to the number of Shares that will be beneficially owned by a selling stockholder upon termination of this offering.

For purposes of the table below, however, we have assumed that after termination of this offering none of the shares covered by this prospectus will be beneficially owned by the selling stockholders and further assumed that the selling stockholders will not acquire or dispose of beneficial ownership of any additional shares of Common Stock during the offering. In addition, the selling stockholders may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, any or all of their shares of Common Stock or interests in shares of Common Stock in transactions exempt from the registration requirements of the Securities Act after the date on which the information in the table is presented. See the section titled “Plan of Distribution.”

Name <sup>(1)</sup>	Shares of Common Stock Beneficially Owned Prior to this Offering	Shares of Common Stock Offered <sup>(2)</sup>	Beneficial Ownership After this Offering <sup>(4)</sup>	
			Shares	% <sup>(3)</sup>
Coastlands Capital Partners LP <sup>(5)</sup>	5,950,562	5,950,562	-	-
Entities affiliated with Janus Henderson <sup>(6)</sup>	5,882,352	5,882,352	-	-
Atlas Private Holdings (Cayman) Ltd <sup>(7)</sup>	3,921,568	3,921,568	-	-
Entities affiliated with Vivo Opportunity Fund <sup>(8)</sup>	3,921,568	3,921,568	-	-
5AM Ventures VII, L.P. <sup>(9)</sup>	5,869,091	5,869,091	-	-
Fidelity Mt. Vernon Street Trust: Fidelity Series Growth Company Fund <sup>(10)</sup>	134,415	111,615	22,800	*
Fidelity Mt. Vernon Street Trust: Fidelity Growth Company Fund <sup>(11)</sup>	532,689	422,196	110,493	*
Fidelity Growth Company Commingled Pool <sup>(12)</sup>	726,905	567,638	159,267	*
Fidelity Mt. Vernon Street Trust: Fidelity Growth Company K6 Fund <sup>(13)</sup>	157,397	125,157	32,240	*
Fidelity Select Portfolios: Biotechnology Portfolio <sup>(14)</sup>	1,463,592	1,226,606	236,986	*
Adage Capital Partners, LP <sup>(15)</sup>	1,960,784	1,960,784	-	-
Trails Edge Biotechnology Master Fund, LP <sup>(16)</sup>	1,633,986	1,633,986	-	-
Funds affiliated with Polaris Partners <sup>(17)</sup>	3,932,251	1,307,189	2,625,062	5.6 %
Stonepine Capital, LP <sup>(18)</sup>	1,307,189	1,307,189	-	-
Funds affiliated with Silverarc Capital <sup>(19)</sup>	653,594	653,594	-	-
SynGAP Research Fund, Inc. dba CURE SYNGAP1 <sup>(20)</sup>	326,797	326,797	-	-
Skye Peak Partners LLC <sup>(21)</sup>	406,661	261,437	145,224	*
Red Hook Fund LP <sup>(22)</sup>	245,359	65,359	180,000	*
Jeremy M Sclar 2012 Irrevocable Family Trust <sup>(23)</sup>	216,822	65,359	151,463	*
Funds affiliated with Enavate Sciences <sup>(24)</sup>	3,785,802	3,785,802	-	-
Peter Tuxen Bisgaard <sup>(25)</sup>	32,679	32,679	-	-
Richard Young <sup>(26)</sup>	257,358	15,151	242,207	*
Josh Mandel-Brehm <sup>(27)</sup>	717,754	6,060	711,694	1.5 %
Kelly Gold <sup>(28)</sup>	197,275	6,060	191,215	*
Yuri Maricich <sup>(29)</sup>	60,929	6,060	54,869	*
Leonard Zon <sup>(30)</sup>	155,645	3,030	152,615	*

\* Less than one percent of outstanding Common Stock

(1) All information regarding selling stockholders was provided by the selling stockholders.

- (2) The number of shares of Common Stock in the column “Shares of Common Stock Offered” represents all of the shares of Common Stock that a selling stockholder may offer and sell from time to time under this prospectus, including (i) all shares of Common Stock purchased by such selling stockholder in the Private Placement, (ii) all of the shares of Common Stock issuable upon exercise of the 2025 Pre-Funded Warrants purchased by such selling stockholder in the Private Placement, without giving effect to the Beneficial Ownership Limitation, if any and (iii) all shares of Common Stock held by such selling stockholder that are included in the 6,713,717 shares of Common Stock subject to piggyback registration rights under the Investors’ Rights Agreement.
- (3) Percentage ownership is based on a denominator equal to the sum of (i) 46,880,185 shares of Common Stock outstanding as of October 1, 2025 and (ii) the number of shares of Common Stock issuable upon exercise or conversion of convertible securities beneficially owned by the applicable selling stockholder.
- (4) Assumes that all shares of Common Stock being registered under the registration statement of which this prospectus forms a part are sold in this offering, and that none of the selling stockholders acquire additional shares of our Common Stock after the date of this prospectus and prior to completion of this offering.
- (5) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 2,812,709 shares of Common Stock and 3,137,853 shares of Common Stock issuable upon the exercise of 2025 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Coastlands Capital Partners LP (“Coastlands Capital”) in the Private Placement. The 2025 Pre-Funded Warrants held by Coastlands Capital are subject to a beneficial ownership conversion limitation such that Coastlands Capital cannot convert 2025 Pre-Funded Warrants held by it to the extent it would result in Coastlands Capital and its affiliates beneficially owning more than 9.99% of the Company’s outstanding shares of Common Stock. Coastlands Capital LP is the investment adviser to Coastlands Capital and Coastlands Capital GP LLC (“Coastlands GP”) is the general partner of Coastlands Capital. Coastlands Capital LLC (the “General Partner”, and together with Coastlands Capital, Coastlands Capital LP and Coastlands GP, the “Coastlands Entities”) is the general partner of Coastlands Capital LP. Matthew D. Perry is the control person of the Coastlands Entities. The Coastlands Entities and Mr. Perry each disclaim membership in a group. The Coastlands Entities and Mr. Perry also each disclaim beneficial ownership of the shares of Common Stock except to the extent of such entity or person’s pecuniary interest therein. The address and principal office of the Coastlands Entities and Mr. Perry is 601 California St., Suite 1210, San Francisco, CA 94108.
- (6) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 3,975,867 shares of Common Stock and 1,063,478 shares of Common Stock issuable upon the exercise of 2025 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Janus Henderson Biotech Innovation Master Fund Limited (“JHBIF”) in the Private Placement and (ii) 665,103 shares of Common Stock and 177,904 shares of Common Stock issuable upon the exercise of 2025 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Janus Henderson Biotech Innovation Master Fund II Limited (“JHBIF2”) in the Private Placement. The warrants held by JHBIF and JHBIF2 (collectively, the “Janus Funds”) prohibit the exercise thereof if, after giving effect to such exercise, the beneficial ownership of the Janus Funds and their affiliates and any person whose beneficial ownership would be attributable to such entities, would exceed 9.99%. These 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 the Janus Funds and has the ability to make decisions with respect to the voting and disposition of the shares subject to the oversight of the board of directors of the Janus Funds. Under the terms of its management contract with the Janus Funds, Janus has overall responsibility for directing the investments of the Janus Funds in accordance with the Janus Fund’s investment objective, policies and limitations. The Janus Funds have one or more portfolio managers appointed by and serving at the pleasure of Janus who makes decisions with respect to the disposition of the shares of Common Stock offered hereby. The portfolio managers for the Janus Funds are Andrew Acker, Daniel S. Lyons and Agustin Mohedas. Each of Mr. Acker, Mr. Lyons and Mr. Mohedas disclaim any beneficial ownership of these shares. The address of Janus and each of the Janus Funds is c/o Janus Henderson Investors US LLC, 151 Detroit Street, Denver, CO 80206.
- (7) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 2,297,045 shares of Common Stock and 1,624,523 shares of Common Stock issuable upon the exercise of 2025 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Atlas Private Holdings (Cayman) Ltd. (“Atlas”) in the Private Placement. The 2025 Pre-Funded Warrants held by Atlas are subject to a beneficial ownership conversion limitation such that Atlas cannot convert 2025 Pre-Funded Warrants held by it to the extent it would result in Atlas and its affiliates beneficially owning more than 4.99% of the Company’s outstanding shares of Common Stock. Balyasny Asset Management L.P. (“BAM”) serves as investment adviser to Atlas. Dmitry Balyasny, via intermediate entities, manages Balyasny Asset Management L.P. and has voting and investment control over the reported securities. The address and principal office of Atlas is c/o Maples Corporate Services Limited, P.O. Box 309, Ugland House, Grand Cayman KY1-1104, Cayman Islands. The address and principal office of BAM and Mr. Balyasny is 444 West Lake Street, 50th Floor, Chicago, IL 60606.
- (8) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 3,561,793 shares of Common Stock purchased by Vivo Opportunity Fund Holdings, L.P. (“Vivo”) in the Private Placement and (ii) 359,775 shares of Common Stock purchased by Vivo Opportunity Cayman Fund, L.P. (“Vivo Cayman,” and together with Vivo, the “Vivo Opportunity Funds”) in the Private Placement. Vivo Opportunity, LLC is the general partner of Vivo and may be deemed to share voting, investment and dispositive power over the shares held by Vivo. Vivo Opportunity Cayman, LLC is the general partner of Vivo Cayman and may be deemed to share voting, investment and dispositive power over the shares held by Vivo Cayman. The voting members of each of Vivo Opportunity, LLC and Vivo Opportunity Cayman, LLC are Kevin Dai, Gaurav Aggarwal, Frank Kung and Shan Fu, none of whom has individual voting or investment power with respect to the shares held by Vivo or Vivo Cayman. The address of each of the individuals and entities referenced in this footnote is c/o Vivo Capital LLC, 192 Lytton Avenue, Palo Alto, California 94301.
- (9) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 2,941,176 shares of Common Stock purchased by 5AM Ventures VII, L.P. (“Ventures VII”) in the Private Placement, (ii) 2,625,145 shares of Common Stock previously purchased by 5AM Ventures VI, L.P. (“Ventures VI”), which are subject to piggyback registration rights under the Investors’ Rights Agreement and (iii) 302,770 shares of Common Stock previously purchased by 5AM Opportunities II, L.P. (“Opportunities II”), which are subject to piggyback registration rights under the Investors’ Rights Agreement. 5AM Partners VII, LLC (“Partners VII”) is the sole general partner of Ventures VII. 5AM Partners VI, LLC (“Partners VI”) is the sole general partner of Ventures VI. 5AM Opportunities II (GP), LLC (“Opportunities II GP”) is the sole general partner of Opportunities II. Dr. Kush M. Parmar and Andrew J. Schwab are the managing

members of Partners VII, Partners VI and Opportunities II GP and may be deemed to have shared voting and investment power over the securities beneficially owned by Ventures VII, Ventures VI and Opportunities II. Each of Partners VII, Partners VI, Opportunities II, Dr. Parmar, and Mr. Schwab disclaims beneficial ownership of such securities except to the extent of its or his respective pecuniary interest therein. Mr. Schwab is a member of the Company's board of directors. The address and principal office of the persons and entities referenced in this footnote c/o 5AM Ventures, 4 Embarcadero Center, Suite 3110, San Francisco, CA 94111.

- (10) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 111,615 shares of Common Stock purchased by Fidelity Mt. Vernon Street Trust: Fidelity Series Growth Company Fund in the Private Placement and (ii) 22,800 shares of Common Stock previously purchased by Fidelity Mt. Vernon Street Trust: Fidelity Series Growth Company Fund. This fund is managed by direct or indirect subsidiaries of FMR LLC. Abigail P. Johnson is a Director, the Chairman and the Chief Executive Officer of FMR LLC. Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. The address of this fund is 245 Summer Street, Boston, MA 02210.
- (11) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 422,196 shares of Common Stock purchased by Fidelity Mt. Vernon Street Trust: Fidelity Growth Company Fund in the Private Placement and (ii) 110,493 shares of Common Stock previously purchased by Fidelity Mt. Vernon Street Trust: Fidelity Growth Company Fund. This fund is managed by direct or indirect subsidiaries of FMR LLC. Abigail P. Johnson is a Director, the Chairman and the Chief Executive Officer of FMR LLC. Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. The address of this fund is 245 Summer Street, Boston, MA 02210.
- (12) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 567,638 shares of Common Stock purchased by Fidelity Growth Company Commingled Pool in the Private Placement and (ii) 159,267 shares of Common Stock previously purchased by Fidelity Growth Company Commingled Pool. This fund is managed by direct or indirect subsidiaries of FMR LLC. Abigail P. Johnson is a Director, the Chairman and the Chief Executive Officer of FMR LLC. Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. The address of this fund is 245 Summer Street, Boston, MA 02210.
- (13) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 125,157 shares of Common Stock purchased by Fidelity Mt. Vernon Street Trust: Fidelity Growth Company K6 Fund in the Private Placement and (ii) 32,240 shares of Common Stock previously purchased by Fidelity Mt. Vernon Street Trust: Fidelity Growth Company K6 Fund. This fund is managed by direct or indirect subsidiaries of FMR LLC. Abigail P. Johnson is a Director, the Chairman and the Chief Executive Officer of FMR LLC. Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. The address of these funds and accounts is 245 Summer Street, Boston, MA 02210.
- (14) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 1,226,606 shares of Common Stock purchased by Fidelity Select Portfolios: Biotechnology Portfolio in the Private Placement and (ii) 236,986 shares of Common Stock previously purchased by Fidelity Select Portfolios: Biotechnology Portfolio. This fund is managed by direct or indirect subsidiaries of FMR LLC. Abigail P. Johnson is a Director, the Chairman and the Chief Executive Officer of FMR LLC. Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. The address of this fund is 245 Summer Street, Boston, MA 02210.
- (15) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of 1,960,784 shares of Common Stock purchased by Adage Capital Partners, L.P. in the Private Placement. Bob Atchinson and Phillip Gross are the managing members of Adage Capital Advisors, L.L.C., which is the managing member of Adage Capital Partners GP, L.L.C., which is the general partner of Adage, and each such person or entity, as the case may be, has shared voting and/or investment power over the securities held by Adage Capital Partners, LP and may be deemed the beneficial owner of such shares, and each such person or entity, as the case may be, disclaims beneficial ownership of such securities except to the extent of their respective pecuniary interest therein. The address of these funds and persons is 200 Clarendon St., 52nd Floor, Boston, MA 02116.
- (16) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of 1,633,986 shares of Common Stock purchased by Trails Edge Biotechnology Master Fund, LP ("Trails Edge Biotechnology") in the Private Placement. Trails Edge Capital Partners, LP ("Trails Edge Capital"), as the investment manager to Trails Edge Biotechnology, may be deemed to beneficially own these securities. Mr. Yehudai, as the Chief Investment Officer of Trails Edge Capital, exercises voting and investment discretion with

- respect to these securities and as such may be deemed to beneficially own such securities. The address of these funds and persons is 3455 Peachtree Road NE, Atlanta, GA 30326.
- (17) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 1,221,721 shares of Common Stock purchased by Polaris Partners VII, L.P. (“Polaris VII”) in the Private Placement, (ii) 1,603,779 shares of Common Stock previously purchased by Polaris VII, (iii) 85,468 shares of Common Stock purchased by Polaris Entrepreneurs’ Fund VII, L.P. (“Polaris Entrepreneurs’ VII” and, together with Polaris VII, the “Polaris VII Funds”) in the Private Placement, (iv) 112,193 shares of Common Stock previously purchased by Polaris Entrepreneurs’ VII and (v) 909,090 shares of Common Stock previously purchased by Polaris Partners X, L.P. Polaris Partners GP X, L.L.C. is the general partner of Polaris Partners X, L.P. Amir Nashat, ScD, a member of the Company’s board of directors, holds an interest in Polaris Partners GP X, L.L.C. and is a managing member of Polaris Management Co. VII, L.L.C., the general partner of each of the Polaris VII Funds. The principal business address of each of the persons and entities referenced in this footnote is One Marina Park Drive, 8<sup>th</sup> Floor, Boston, MA 02210.
  - (18) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 1,307,189 shares of Common Stock purchased by Stonepine Capital, LP (“Stonepine Capital”) in the Private Placement. Jon M. Plexico exercises voting and investment discretion with respect to these securities and as such may be deemed to beneficially own the shares held by Stonepine Capital. The address of these funds and persons is 2900 NW Clearwater Drive, Ste 100-11, Bend, OR 97703.
  - (19) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 17,626 shares of common stock purchased by SilverArc Capital Alpha Fund I, L.P. (“Fund I”) in the Private Placement, (ii) 165,404 shares of common stock purchased by Squarepoint Diversified Partners Fund Limited (“Squarepoint”) in the Private Placement and (iii) 470,564 shares of common stock purchased by SilverArc Capital Alpha Fund II, L.P. (“Fund II”) in the Private Placement. SilverArc Capital Management, LLC is the controlling entity of Fund I, Fund II, Squarepoint, and is solely owned by Devesh Gandhi. Mr. Gandhi may be deemed to have shared voting and investment discretion of the securities managed by SilverArc Capital Management, LLC. Mr. Gandhi disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein. The address of each of the persons and entities referenced in this footnote is 20 Park Plaza, 4th Floor, Boston, MA 02116.
  - (20) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 326,797 shares of Common Stock purchased by Syngap Research Fund Incorporated (dba “CURE SYNGAP1”) in the Private Placement. J. Michael Graglia exercises voting and investment discretion with respect to these securities and as such may be deemed to beneficially own the shares held by Syngap Research Fund Incorporated. The address of these funds and persons is 2856 Curie Place, San Diego, CA 92122-4136.
  - (21) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 261,437 shares of Common Stock purchased by Skye Peak Partners LLC in the Private Placement and (ii) 145,224 shares of Common Stock previously purchased by the Skye Peak Partners LLC. Emmett H. Gordon exercises voting and investment discretion with respect to these securities and as such may be deemed to beneficially own the shares held by Skye Peak Partners LLC. The address of these funds and persons is c/o Trove, PO Box 962049, Boston, MA 02196.
  - (22) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 65,359 shares of Common Stock purchased by Red Hook Fund LP (the “Red Hook Fund”) in the Private Placement and (ii) 180,000 shares of Common Stock previously purchased by the Red Hook Fund. Red Hook Asset Management LLC (the “Investment Manager”), a Delaware limited liability company, is the investment advisor to the Red Hook Fund and Red Hook Fund GP LLC (“General Partner”) is the general partner of the Red Hook Fund. Mathew Lazarus and Jeff Lopatin are the managing members of the Investment Manager and the General Partner, and may each be deemed to beneficially own the shares beneficially owned by the Red Hook Fund LP. Mathew Lazarus and Jeff Lopatin each disclaims beneficial ownership of securities beneficially owned by the Red Hook Fund LP. The address of these funds and persons is 44 Ball Road, Mountain Lakes, NJ 07046.
  - (23) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 65,359 shares of Common Stock purchased by the Jeremy M. Sclar 2012 Irrevocable Family Trust in the Private Placement and (ii) 151,463 shares of Common Stock previously purchased by the Jeremy M. Sclar 2012 Irrevocable Family Trust. Richard A. Marks and Kerry Ann Sclar exercise voting and investment discretion with respect to these securities and as such may be deemed to beneficially own the shares held by Jeremy M. Sclar 2012 Irrevocable Family Trust. The address of the Jeremy M. Sclar 2012 Irrevocable Family Trust is 33 Boylston Street, Suite 3000, Chestnut Hill, MA 02467.
  - (24) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 3,785,802 shares of Common Stock previously purchased by Everest Aggregator, LP (“Everest LP”), which are subject to piggyback registration rights under the Investors’ Rights Agreement. Everest LP is a limited partnership affiliated with Enavate Sciences. Enavate Sciences GP, LLC (“Enavate GP”) is the general partner of Everest LP. Voting, investment and dispositive power with respect to the shares held by Everest LP is held by the managers of Enavate GP collectively. The principal business address of Everest LP is 106 West 56th Street, New York, New York 10019. The principal business office of Enavate GP is 2882 Sand Hill Road, Suite 100, Menlo Park, California 94025.
  - (25) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 32,679 shares of Common Stock purchased by Peter Tuxen Bisgaard in the Private Placement. Mr. Bisgaard’s address is 35 Woodview Lane, Woodside, CA 94062.
  - (26) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 15,151 shares of Common Stock purchased by Richard Young in the Private Placement, (ii) 154,859 shares of Common Stock previously granted or purchased by Dr. Young and (iii) 87,348 shares of Common Stock underlying stock options exercisable within 60 days of October 1, 2025. Dr. Young is a member of the Company’s board of directors. Dr. Young’s address is c/o CAMP4 Therapeutics Corporation, One Kendall Square, Building 1400 West, 3rd Floor, Cambridge, MA 02139.
  - (27) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 6,060 shares of Common Stock purchased by Josh Mandel-Brehm in the Private Placement, (ii) 272,357 shares of Common Stock previously granted or purchased by Mr. Mandel-Brehm and (iii) 439,337 shares of Common Stock underlying stock options exercisable within 60 days of October 1, 2025. Mr. Mandel-Brehm is the President and Chief Executive Officer of the Company. Mr. Mandel-Brehm’s address is c/o CAMP4 Therapeutics Corporation, One Kendall Square, Building 1400 West, 3rd Floor, Cambridge, MA 02139.
  - (28) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 6,060 shares of Common Stock purchased by Kelly Gold in the Private Placement, (ii) 61,817 shares of Common Stock previously granted or purchased by Ms. Gold and (iii) 129,398 shares of Common Stock underlying stock options exercisable within 60 days of October 1, 2025. Ms. Gold is the Chief

- Financial Officer of the Company. Ms. Gold's address is c/o CAMP4 Therapeutics Corporation, One Kendall Square, Building 1400 West, 3rd Floor, Cambridge, MA 02139.
- (29) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 6,060 shares of Common Stock purchased by Yuri Maricich in the Private Placement, and (ii) 54,869 shares of Common Stock underlying stock options exercisable within 60 days of October 1, 2025. Dr. Maricich is the Chief Medical Officer of the Company. Dr. Maricich's address is c/o CAMP4 Therapeutics Corporation, One Kendall Square, Building 1400 West, 3rd Floor, Cambridge, MA 02139.
- (30) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 3,030 shares of Common Stock purchased by Leonard Zon in the Private Placement, (ii) 103,513 shares of Common Stock previously granted or purchased by Dr. Zon and (iii) 49,102 shares of Common Stock underlying stock options exercisable within 60 days of October 1, 2025. Dr. Zon serves as an observer of the Company's board of directors. Dr. Zon's address is c/o CAMP4 Therapeutics Corporation, One Kendall Square, Building 1400 West, 3rd Floor, Cambridge, MA 02139.

## 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 of Common Stock or interests therein:

- distributions to members, partners, stockholders or other equityholders of the selling stockholders;
- 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 and settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- 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 pursuant to 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 stockholders 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 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. Upon any exercise of the 2025 Pre-Funded warrants by payment of cash, however, we will receive the exercise price of the 2025 Pre-Funded Warrants.

The selling stockholders also may resell all or a portion of the shares of Common Stock owned by them in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule, or another available exemption from the registration requirements under the Securities Act.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of shares of Common Stock or interests therein may be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act (it being understood that the selling stockholders shall not be deemed to be underwriters solely as a result of their participation in this offering). Any discounts, commissions, concessions or profit they earn on any resale of the shares covered by this prospectus 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 agent, 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 Securities Exchange Act of 1934 (the “Exchange Act”) may apply to sales of shares covered by this prospectus 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: (i) the date on which the selling stockholders shall have resold or otherwise disposed of all the shares covered by this prospectus and (ii) the date on which the shares covered by this prospectus no longer constitute “Registrable Securities” as such term is defined in the Registration Rights Agreement, such that they may be resold by the selling stockholders without registration and without regard to any volume or manner-of-sale limitations and without current public information pursuant to Rule 144 under the Securities Act or any other rule of similar effect.

## **LEGAL MATTERS**

The validity of the issuance of the securities offered hereby will be passed upon for us by Ropes & Gray LLP, Boston, Massachusetts.

## **EXPERTS**

The consolidated financial statements of CAMP4 Therapeutics Corporation appearing in CAMP4 Therapeutics Corporation's Annual Report (Form 10-K) for the year ended December 31, 2024, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon (which includes an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern described in Note 1 to the consolidated financial statements), included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

## **WHERE YOU CAN FIND MORE INFORMATION**

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the shares of Common Stock being offered under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. Neither we nor any agent, underwriter or dealer has authorized any person to provide you with different information. We are not making an offer of Common Stock in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of Common Stock offered by this prospectus.

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

We maintain a website at [www.camp4tx.com](http://www.camp4tx.com). Information contained in, or accessible through, our website is not a part of, and is not incorporated into, this prospectus, and you should not consider it part of this prospectus.

## INCORPORATION OF DOCUMENTS BY REFERENCE

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

- our Annual Report on Form 10-K for the year ended December 31, 2024, as filed with the SEC on [March 27, 2025](#);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2025, as filed with the SEC on [May 13, 2025](#), June 30, 2025, as filed with the SEC on [August 14, 2025](#), and September 30, 2025, as filed with the SEC on [November 6, 2025](#);
- our Current Reports on Form 8-K as filed with the SEC on [January 7, 2025](#), [March 18, 2025](#), [June 13, 2025](#) and [September 10, 2025](#);
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2024 from our Definitive Proxy Statement on Schedule 14A for the 2025 Annual Meeting of Stockholders, as filed with the SEC on [April 30, 2025](#); and
- the description of our Common Stock, which is contained in the Registration Statement on Form 8-A, as filed with the SEC on [October 8, 2024](#), as supplemented by the description of our Common Stock and preferred stock contained in [Exhibit 4.1](#) to our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, filed with the SEC on [March 27, 2025](#).

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

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

CAMP4 Therapeutics Corporation  
One Kendall Square  
Building 1400 West, 3rd Floor  
Cambridge, Massachusetts 02139  
(617) 651-8867  
Attention: Corporate Secretary

Copies of these filings are also available, without charge, on the SEC’s website at [www.sec.gov](http://www.sec.gov) and on our website at [www.camp4tx.com](http://www.camp4tx.com) as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not a part of this prospectus.