

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

FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CAMP4 Therapeutics Corporation

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

81-1152476
(I.R.S. Employer
Identification No.)

One Kendall Square
Building 1400 West, 3rd Floor
Cambridge, Massachusetts 02139
(617) 651-8867

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Josh Mandel-Brehm
President and Chief Executive Officer
CAMP4 Therapeutics Corporation
One Kendall Square
Building 1400 West, 3rd Floor
Cambridge, Massachusetts 02139
(617) 651-8867

(Name, address including zip code, and telephone number, including area code, of agent for service)

With copies to:
Thomas Danielski
Ropes & Gray LLP
Prudential Tower
800 Boylston St.
Boston, Massachusetts 02199
(617) 951-7000

From time to time after the effective date of this Registration Statement
(Approximate date of commencement of proposed sale to the public)

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act. ☐

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until this registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The selling stockholders may not sell these securities or accept an offer to buy these securities until the registration statement is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED August 6, 2026

PRELIMINARY PROSPECTUS

CAMP4 THERAPEUTICS CORPORATION



10,795,804 Shares of Common Stock
21,925,368 Shares of Common Stock Underlying Pre-Funded Warrants

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) 10,795,804 shares of our common stock, par value \$0.0001 per share (the “Common Stock”), and (ii) 21,925,368 shares of Common Stock issuable upon the exercise of pre-funded warrants, with an exercise price of \$0.0001 per share (the “2026 Pre-Funded Warrants” and, together with the Common Stock, the “Resale Shares”), that we issued in connection with the Second Closing (as defined below) of the private placement, which initially closed on September 11, 2025, pursuant to the Securities Purchase Agreement, dated as of September 9, 2025 (the “Purchase Agreement”), by and among CAMP4 Therapeutics Corporation and the investors party thereto.

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 2026 Pre-Funded Warrants, to the extent such 2026 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 August 5, 2026, the last reported sale price of our Common Stock was \$4.01 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 [4](#), 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 _____, 2026

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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 have 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. Our lead product candidate, CMP-002, has the potential to be the first disease-modifying therapy for the treatment of synaptic Ras GTPase activating protein 1 (“SYNGAP1”)-related disorder, or SYNGAP1, a severe developmental and epileptic encephalopathy (“DEE”) characterized by seizures, developmental delays, and cognitive impairments. SYNGAP1 is caused by haploinsufficiency of the *SYNGAP1* gene, where mutation of one functional gene copy results in a reduction in SYNGAP protein levels of up to 50%. While we believe that it remains underdiagnosed, we estimate that there are approximately 21,000 individuals living with SYNGAP1 in the United States and the five largest European markets. There are no approved disease-modifying therapies for SYNGAP1.

CMP-002 is a novel, intrathecally delivered antisense oligonucleotide (“ASO”) designed to target the *SYNGAP1* gene at the transcriptional level to increase gene expression, which may increase SYNGAP protein levels in amounts sufficient to yield therapeutic benefit. In preclinical studies, intracerebroventricular injection of CMP-002 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. A single dose of CMP-002 also produced a statistically significant improvement in both seizure threshold and severity of chemically induced tonic-clonic seizures in SYNGAP1 haploinsufficient mice, suggesting the potential for therapeutic benefit across both the neurodevelopmental and seizure phenotypes that characterize SYNGAP1-related disorder. In addition, biweekly intrathecal injections of CMP-002 in cynomolgus monkeys were well tolerated and significantly increased SYNGAP protein levels across multiple brain regions clinically relevant to the disease, with dose-linear increases of CMP-002 in disease-relevant brain regions. In July 2026, we announced that we had received clearance from Australia’s Therapeutic Goods Administration and the local Human Research Ethics Committee to initiate our Phase 1/2 clinical trial of CMP-002 in individuals with SYNGAP1.

Our product development efforts are enabled by our proprietary RAP Platform. We leverage our RAP Platform to identify and characterize regulatory RNAs (“regRNAs”), which 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 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 ASO candidates. These ASOs are designed to bind to the identified regRNA and amplify the expression of the target gene in a specific and controllable way.

Our primary therapeutic focus is on diseases of the central nervous system (“CNS”), where there are numerous rare and prevalent haploinsufficient diseases with no approved treatments for which a modest increase in protein expression has the potential to be clinically meaningful. In addition to our SYNGAP1 program, we are advancing discovery programs in other CNS indications. We also intend to leverage strategic discovery partnerships, including our research, collaboration, and license agreement with GlaxoSmithKline, to extend the application of our RAP Platform beyond the CNS and validate our approach to gene upregulation in additional tissues and disease areas.

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. 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, 2025 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 2026 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 38.6% of our total outstanding Common Stock as of August 3, 2026, assuming the exercise of the 2026 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 certain securities, in up to two closings in a private placement transaction (the “Private Placement”). The initial closing occurred on September 11, 2025 (the “Initial Closing”). At the Initial Closing, the Company issued 26,717,414 shares of the Company’s Common Stock and 6,003,758 pre-funded warrants (the “2025 Pre-Funded Warrants”) for net cash proceeds of \$46.7 million, after deducting \$3.3 million in issuance costs and legal fees. The Purchase Agreement also contemplates a second closing of the Private Placement (the “Second Closing”). The Second Closing was triggered upon the achievement of the CTA Milestone (as defined in the Purchase Agreement) and the Company’s receipt of a Price Threshold Waiver (as defined in the Purchase Agreement) (together, the “Second Closing Trigger”). Pursuant to the Purchase Agreement, the Second Closing occurred on August 3, 2026. At the Second Closing, the Company sold to the selling stockholders 10,756,498 shares of Common Stock at a purchase price of \$1.53 per share, 21,925,368 Pre-Funded Warrants at a purchase price of \$1.5299 per Pre-Funded Warrant to certain investors in lieu of shares of Common Stock, and 39,306 shares of Common Stock at a purchase price of \$1.65 per share to certain directors, consultants and members of management of the Company. The gross proceeds of the Second Closing 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 2026 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 September 2, 2026. The Company has agreed to use reasonable best efforts to keep such registration statement continuously effective pursuant to Rule 415 promulgated under the Securities Act of 1933, as amended (the “Securities Act”) 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 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, 2025, as filed with the SEC on March 5, 2026.

2026 Pre-Funded Warrants

The material terms and provisions of the 2026 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 2026 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 2026 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 2026 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 2026 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 2026 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 2026 Pre-Funded Warrant holders have the option to provide payment of the exercise price of the shares being acquired upon exercise of the 2026 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 2026 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 2026 Pre-Funded Warrant.

Transferability. Subject to applicable laws and the restriction on transfer set forth in the 2026 Pre-Funded Warrants, the 2026 Pre-Funded Warrants may be transferred.

Fundamental Transactions. Upon the consummation of a fundamental transaction (as described in the 2026 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 2026 Pre-Funded Warrants will be entitled to receive, upon exercise of the 2026 Pre-Funded Warrants, the same kind and amount of securities, cash or other property that such holder would have received had they exercised the 2026 Pre-Funded Warrants immediately prior to such fundamental transaction, without regard to any limitations on exercise contained in the 2026 Pre-Funded Warrants.

Rights as a Stockholder. Except for the right to participate in certain dividends and distributions and as otherwise provided in the 2026 Pre-Funded Warrants or by virtue of a holder’s ownership of our Common Stock, the holders of the 2026 Pre-Funded Warrants do not have the rights or privileges of holders of our Common Stock, including any voting rights, until they exercise their 2026 Pre-Funded Warrants.

Waivers and Amendments. No term of the 2026 Pre-Funded Warrants may be amended or waived without the written consent of the holder of such 2026 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 to become available;
- the timing of our planned 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 of our product candidates;
- our ability to obtain and maintain the benefits of regulatory designations, including orphan drug designation, for our product candidates;
- 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 candidate;
- 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, 2025, 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 2026 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 2026 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 2026 Pre-Funded Warrants to fund the preclinical and clinical development of CMP-002, 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 2026 Pre-Funded Warrants, which the selling stockholders acquired as part of the Second Closing pursuant to the Purchase Agreement and (ii) to use reasonable best efforts to keep such registration statement continuously effective pursuant to Rule 415 promulgated under the Securities Act 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 2026 Pre-Funded Warrants issued to the selling stockholders in the Second Closing of 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 2026 Pre-Funded Warrants issued in the Second Closing 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 for 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 August 3, 2026, 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 August 3, 2026.

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 August 3, 2026, which includes (i) all shares of our Common Stock purchased by such selling stockholder in the Second Closing, and (ii) all of the shares of Common Stock issuable upon exercise of the 2026 Pre-Funded Warrants purchased by such selling stockholder in the Second Closing, not reflecting the Beneficial Ownership Limitation. 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 ⁽¹⁾	Shares of Common Stock Beneficially Owned Prior to this Offering	Shares of Common Stock Offered ⁽²⁾	Beneficial Ownership After this Offering ⁽⁴⁾	
			Shares	% ⁽³⁾
Coastlands Capital Partners LP ⁽⁵⁾	12,850,128	6,765,264	6,084,864	8.37 %
Entities affiliated with Janus Henderson ⁽⁶⁾	12,995,351	6,687,715	6,307,636	9.11 %
Atlas Private Holdings (Cayman) Ltd ⁽⁷⁾	8,194,447	4,458,477	3,735,970	5.49 %
Entities affiliated with Vivo Opportunity Fund ⁽⁸⁾	8,705,046	4,458,478	4,246,568	6.45 %
SAM Ventures VII, L.P. ⁽⁹⁾	9,048,649	3,179,558	5,869,091	8.90 %
Adage Capital Partners, LP ⁽¹⁰⁾	4,190,023	2,229,239	1,960,784	3.12 %
Trails Edge Biotechnology Master Fund, LP ⁽¹¹⁾	3,790,636	1,857,699	1,932,937	3.08 %
Stonepine Capital, LP ⁽¹²⁾	2,823,349	1,486,160	1,337,189	2.13 %
Funds affiliated with SilverArc Capital ⁽¹³⁾	1,396,671	743,077	653,594	1.04 %
SynGAP Research Fund, Inc. dba CURE SYNGAP1 ⁽¹⁴⁾	680,080	353,283	326,797	*
Skye Peak Partners LLC ⁽¹⁵⁾	544,063	282,626	261,437	*
Red Hook Fund LP ⁽¹⁶⁾	149,666	74,307	75,359	*
Jeremy M Sclar 2012 Irrevocable Family Trust ⁽¹⁷⁾	287,478	70,656	216,822	*
Peter Tuxen Bisgaard ⁽¹⁸⁾	68,006	35,327	32,679	*
Richard Young ⁽¹⁹⁾	295,759	16,378	279,381	*
Josh Mandel-Brehm ⁽²⁰⁾	919,508	6,551	912,957	1.44 %
Kelly Gold ⁽²¹⁾	278,803	6,551	272,252	*
Yuri Maricich ⁽²²⁾	140,373	6,551	133,822	*
Leonard Zon ⁽²³⁾	170,883	3,275	167,608	*

* 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 Second Closing and (ii) all of the shares of Common Stock issuable upon exercise of the 2026 Pre-Funded Warrants purchased by such selling stockholder in the Second Closing, without giving effect to the Beneficial Ownership Limitation, if any.

(3) Percentage ownership is based on a denominator equal to the sum of (i) 62,753,200 shares of Common Stock outstanding as of August 3, 2026 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 6,765,264 shares of Common Stock issuable upon the exercise of 2026 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Coastlands Capital Partners LP (“Coastlands Capital”) in the Second Closing. The pre-funded warrants, including the 2026 Pre-Funded Warrants, held by Coastlands Capital are subject to a beneficial ownership conversion limitation such that Coastlands Capital cannot convert 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 disclaims membership in a group. The Coastlands Entities and Mr. Perry also each disclaims 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” include (i) 1,211,226 shares of Common Stock and 4,259,104 shares of Common Stock issuable upon the exercise of 2026 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 Second Closing, and (ii) 269,551 shares of Common Stock and 947,834 shares of Common Stock issuable upon the exercise of 2026 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 Second Closing. The pre-funded warrants held by JHBIF and JHBIF2 (collectively, the “Janus Funds”), including the 2025 Pre-Funded Warrants purchased by the Janus Funds in the Initial Closing, 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 Funds’ 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 disclaims 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” include 805,804 shares of Common Stock and 3,652,673 shares of Common Stock issuable upon the exercise of 2026 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Atlas Private Holdings (Cayman) Ltd. (“Atlas”) in the Second Closing. The pre-funded warrants held by Atlas, including the 2025 Pre-Funded Warrants purchased by Atlas in the Initial Closing, are subject to a beneficial ownership conversion limitation such that Atlas cannot convert the 2025 Pre-Funded Warrants or the 2026 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 and has voting and investment control over the reported securities. The address and principal office of Atlas 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” include (i) 4,776,626 shares of Common Stock and 2,834,612 shares of Common Stock issuable upon the exercise of 2026 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Vivo Opportunity Fund Holdings, L.P. (“Vivo”) in the Private Placement, including 1,214,833 shares of Common Stock purchased in the Second Closing, (ii) 482,485 shares of Common Stock and 286,323 shares of Common Stock issuable upon the exercise of 2026 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Vivo Opportunity Cayman Fund, L.P. (“Vivo Cayman,” and together with Vivo, the “Vivo Opportunity Funds”) in the Private Placement, including 122,710 shares of Common Stock purchased in the Second Closing, (iii) 295,198 shares of Common Stock previously purchased by Vivo and (iv) 29,802 shares of Common Stock previously purchased by Vivo Cayman. The 2026 Pre-Funded Warrants held by the Vivo Opportunity Funds are subject to a beneficial ownership conversion limitation such that the Vivo Opportunity Funds cannot convert the 2026 Pre-Funded Warrants held by them to the extent it would result in the Vivo Opportunity Funds and their affiliates beneficially owning more than 9.99% of the Company’s outstanding shares of Common Stock. 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” include (i) 6,120,734 shares of Common Stock purchased by 5AM Ventures VII, L.P. (“Ventures VII”) in the Private Placement, including 3,179,558 shares of Common Stock issuable upon the exercise of 2026 Pre-Funded Warrants (which does not reflect the beneficial ownership conversion limitation described below) purchased by Ventures VII in the Second Closing, (ii) 2,625,145 shares of Common Stock previously purchased by 5AM Ventures VI, L.P. (“Ventures VI”) and (iii) 302,770 shares of Common Stock previously purchased by 5AM Opportunities II, L.P. (“Opportunities II”). The 2026 Pre-Funded Warrants held by Ventures VII are subject to a beneficial ownership conversion limitation such that Ventures VII cannot convert the 2026 Pre-Funded Warrants held by it to the extent it would result in Ventures VII and its affiliates beneficially owning more than 9.99% of the Company’s outstanding shares of Common Stock. 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 is 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 4,190,023 shares of Common Stock purchased by Adage Capital Partners, L.P. in the Private Placement, including 2,229,239 shares of Common Stock purchased in the Second Closing. 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.
- (11) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 3,491,685 shares of Common Stock purchased by Trails Edge Biotechnology Master Fund, LP (“Trails Edge Biotechnology”) in the Private Placement, including 1,857,699 shares of Common Stock purchased in the Second Closing, and (ii) 298,951 shares of Common Stock previously purchased by Trails Edge Biotechnology. 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 3445 Peachtree Road NE, Suite 900, Atlanta, GA 30326.
 - (12) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” include (i) 1,486,160 shares of Common Stock purchased by Stonepine Capital, LP (“Stonepine Capital”) in the Second Closing and (ii) 70,000 shares of Common Stock previously purchased by Stonepine Capital. Stonepine Capital purchased an aggregate of 2,793,349 shares of Common Stock 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.
 - (13) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 37,689 shares of Common Stock purchased by SilverArc Capital Alpha Fund I, L.P. (“Fund I”) in the Private Placement, including 20,063 shares of Common Stock purchased in the Second Closing, (ii) 353,402 shares of common stock purchased by Squarepoint Diversified Partners Fund Limited (“Squarepoint”) in the Private Placement, including 187,998 shares of Common Stock purchased in the Second Closing, and (iii) 1,005,580 shares of common stock purchased by SilverArc Capital Alpha Fund II, L.P. (“Fund II”) in the Private Placement, including 535,016 shares of Common Stock purchased in the Second Closing. 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.
 - (14) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 680,080 shares of Common Stock purchased by Syngap Research Fund Incorporated (dba “CURE SYNGAP1”) in the Private Placement, including 353,283 shares of Common Stock purchased in the Second Closing. 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.
 - (15) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” include 282,626 shares of Common Stock purchased by Skye Peak Partners LLC in the Second Closing. Skye Peak Partners LLC purchased an aggregate of 544,063 shares of Common Stock in the Private Placement. 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.
 - (16) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 139,666 shares of Common Stock purchased by Red Hook Fund LP (the “Red Hook Fund”) in the Private Placement, including 74,307 shares of Common Stock purchased in the Second Closing and (ii) 10,000 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.
 - (17) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 136,015 shares of Common Stock purchased by the Jeremy M. Sclar 2012 Irrevocable Family Trust in the Private Placement, including 70,656 shares of Common Stock purchased in the Second Closing 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.
 - (18) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of 68,006 shares of Common Stock purchased by Peter Tuxen Bisgaard in the Private Placement, including 35,327 shares of Common Stock purchased in the Second Closing. Mr. Bisgaard’s address is 35 Woodview Lane, Woodside, CA 94062.
 - (19) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 31,529 shares of Common Stock purchased by Richard Young in the Private Placement, including 16,378 shares of Common Stock purchased in the Second Closing, (ii) 154,859 shares of Common Stock previously granted to or purchased by Dr. Young and (iii) 109,371 shares of Common Stock underlying stock options exercisable within 60 days of August 3, 2026. 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.
 - (20) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 12,611 shares of Common Stock purchased by Josh Mandel-Brehm in the Private Placement, including 6,551 shares of Common Stock purchased in the Second Closing, (ii) 272,357 shares of Common Stock previously granted to or purchased by Mr. Mandel-Brehm and (iii) 634,540 shares of Common Stock underlying stock options exercisable within 60 days of August 3, 2026. 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.
 - (21) The shares reported under “Shares of Common Stock Beneficially Owned Prior to this Offering” consist of (i) 12,611 shares of Common Stock purchased by Kelly Gold in the Private Placement, including 6,551 shares of Common Stock purchased in the Second Closing, (ii) 61,817 shares of Common Stock previously granted to or purchased by Ms. Gold and (iii) 204,375 shares of Common Stock underlying

stock options exercisable within 60 days of August 3, 2026. 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.

- (22) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 12,611 shares of Common Stock purchased by Yuri Maricich in the Private Placement, including 6,551 shares of Common Stock purchased in the Second Closing and (ii) 127,762 shares of Common Stock underlying stock options exercisable within 60 days of August 3, 2026. 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.
- (23) The shares reported under "Shares of Common Stock Beneficially Owned Prior to this Offering" consist of (i) 6,305 shares of Common Stock purchased by Leonard Zon in the Private Placement, including 3,275 shares of Common Stock purchased in the Second Closing, (ii) 103,513 shares of Common Stock previously granted to or purchased by Dr. Zon and (iii) 61,065 shares of Common Stock underlying stock options exercisable within 60 days of August 3, 2026. 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 include 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 2026 Pre-Funded Warrants by payment of cash, however, we will receive the exercise price of the 2026 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, 2025, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

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.

We maintain a website at 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 the registration statement of which this prospectus is a part and prior to the effectiveness of such registration statement, 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, 2025, as filed with the SEC on March 5, 2026;
- our Quarterly Report on [Form 10-Q](#) for the quarter ended March 31, 2026, as filed with the SEC on May 7, 2026;
- our Current Reports on Form 8-K as filed with the SEC on [March 24, 2026](#), [June 12, 2026](#), [July 27, 2026](#) and [August 4, 2026](#);
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2025 from our Definitive Proxy Statement on [Schedule 14A](#) for the 2026 Annual Meeting of Stockholders, as filed with the SEC on April 23, 2026; 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, 2025, filed with the SEC on March 5, 2026.

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 and on our website at 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.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth an estimate of the fees and expenses relating to the issuance and distribution of the securities being registered hereby, other than underwriting discounts and commissions, all of which shall be borne by the Registrant. All of such fees and expenses, except for the SEC registration fee, are estimated:

SEC registration fee	\$	15,545
Accounting fees and expenses	\$	10,000
Legal fees and expenses	\$	150,000
Miscellaneous fees and expenses	\$	5,455
Total	\$	181,000

Item 15. Indemnification of Directors and Officers.

As permitted by Section 102(b)(7) of the Delaware General Corporation Law (the “DGCL”), our amended and restated certificate of incorporation (our “Charter”) includes a provision to eliminate the personal liability of our directors and officers for monetary damages for breach of their fiduciary duties as directors, subject to certain exceptions. In addition, our Charter and amended and restated bylaws provide that we are required to indemnify our officers and directors under certain circumstances, including those circumstances in which indemnification would otherwise be discretionary, and we are required to advance expenses to our officers and directors as incurred in connection with proceedings against them for which they may be indemnified, in each case except to the extent that the DGCL prohibits the elimination or limitation of liability of directors or officers for breaches of fiduciary duty.

Section 145(a) of the DGCL provides that a corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interest of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person’s conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that the person’s conduct was unlawful.

Section 145(b) of the DGCL provides that a corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys’ fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case,

such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

We have entered into indemnification agreements with our directors and executive officers. These indemnification agreements provide broader indemnity rights than those provided under the DGCL and our Charter. These indemnification agreements are not intended to deny or otherwise limit third-party or derivative suits against us or our directors or officers, but to the extent a director or officer were entitled to indemnity or contribution under the indemnification agreement, the financial burden of a third-party suit would be borne by us, and we would not benefit from derivative recoveries against the director or officer. Such recoveries would accrue to our benefit but would be offset by our obligations to the director or officer under the indemnification agreement.

We maintain directors’ and officers’ liability insurance for the benefit of our directors and officers.

Also see “Undertakings.”

Item 16. Exhibits.

Exhibit Number	Description of Document
3.1	Fifth Amended and Restated Certificate of Incorporation of CAMP4 Therapeutics Corporation (incorporated by reference to Exhibit 3.1 to the Form 8-K filed by the Registrant on October 15, 2024)
3.2	Amended and Restated Bylaws of CAMP4 Therapeutics Corporation (incorporated by reference to Exhibit 3.2 to the Form 8-K filed by the Registrant on October 15, 2024)
4.1	Description of Registered Securities (incorporated by reference to Exhibit 4.1 to the Annual Report on Form 10-K filed by the Registrant on March 5, 2026)
4.2	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.1 to the Form 8-K filed by the Registrant with the Securities and Exchange Commission on September 10, 2025)
4.3	Registration Rights Agreement, dated September 9, 2025, by and among CAMP4 Therapeutics Corporation and the investors party thereto (incorporated by reference to Exhibit 10.2 to Form 8-K filed by the Registrant with the Securities and Exchange Commission on September 10, 2025)
5.1	Consent of Ropes & Gray LLP
23.1	Consent of Ernst & Young LLP
23.2	Consent of Ropes & Gray LLP (included in Exhibit 5.1)
24.1	Power of Attorney (incorporated by reference to the signature page hereto)
107	Filing Fee Table

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that the undertakings set forth in paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or

prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser: (i) any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424; (ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant; (iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and (iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (6) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on this 6th of August, 2026.

CAMP4 THERAPEUTICS CORPORATION

By: /s/ Josh Mandel-Brehm
Josh Mandel-Brehm
President and Chief Executive Officer
(Principal executive officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Josh Mandel-Brehm and Kelly Gold and each of them, either of whom may act without the joinder of the other, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments and supplements thereto (including post-effective amendments and registration statements filed pursuant to Rule 462(b)) to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or either of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Josh Mandel-Brehm</u> Josh Mandel-Brehm	President, Chief Executive Officer and Director (Principal executive officer)	August 6, 2026
<u>/s/ Kelly Gold</u> Kelly Gold	Chief Financial Officer (Principal financial and accounting officer)	August 6, 2026
<u>/s/ Douglas E. Williams</u> Douglas E. Williams, PhD	Chair and Director	August 6, 2026
<u>/s/ Steven Holtzman</u> Steven Holtzman	Director	August 6, 2026
<u>/s/ Michael MacLean</u> Michael MacLean	Director	August 6, 2026
<u>/s/ Andrew Schwab</u> Andrew Schwab	Director	August 6, 2026
<u>/s/ Murray Stewart</u> Murray Stewart, DM FRCP	Director	August 6, 2026
<u>/s/ Richard Young</u> Richard Young, PhD	Director	August 6, 2026

Calculation of Filing Fee Tables

S-3

Camp4 Therapeutics Corp

Table 1: Newly Registered and Carry Forward Securities

☐ Not Applicable

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid in Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
Fees to be Paid	1 Equity	Common Stock, par value \$0.0001 per share	Other	32,721,172	\$ 3.44	112,560,831.68	\$ 0.0001381	\$ 15,544.65				
Fees Previously Paid												
Carry Forward Securities												
Carry Forward Securities												
Total Offering Amounts:							\$	\$ 15,544.65				
							112,560,831.68					
Total Fees Previously Paid:								\$ 0.00				
Total Fee Offsets:								\$ 0.00				
Net Fee Due:								\$ 15,544.65				

Offering Note

1

1a. The registration statement to which this exhibit is attached registers the resale from time to time by certain stockholders of an aggregate of 32,721,172 shares of the Registrant's common stock, \$0.0001 par value per share (the "Common Stock"), which consists of (i) 10,795,804 shares of Common Stock and (ii) 21,925,368 shares of Common Stock issuable upon the exercise of outstanding pre-funded warrants that were initially issued pursuant to the Purchase Agreement dated as of September 9, 2025, as amended on August 3, 2026, by and between the Registrant and the selling stockholders named in the registration statement. Pursuant to Rule 416 under the Securities Act of 1933, as amended, the registration statement also covers such additional securities that may be issued as a result of stock splits, stock dividends or similar transactions.

1b. Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) based on the average of the high and low prices of the Registrant's Common Stock as reported on The Nasdaq Global Market on July 31, 2026 to be \$3.54 and \$3.34, respectively.

Table 2: Fee Offset Claims and Sources

☒ Not Applicable

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
Rules 457(b) and 0-11(a)(2)											
Fee Offset Claims											
Fee Offset Sources											
Rule 457(p)											
Fee Offset Claims											
Fee Offset Sources											

Table 3: Combined Prospectuses

☒ Not Applicable

Security Type	Security Class Title	Amount of Securities Previously Registered	Maximum Aggregate Offering Price of Securities Previously Registered	Form Type	File Number	Initial Effective Date
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ROPES & GRAY LLP
PRUDENTIAL TOWER
800 BOYLSTON STREET
BOSTON, MA 02199-3600
WWW.ROPESGRAY.COM

August 6, 2026

CAMP4 Therapeutics Corporation
One Kendall Square
Building 1400 West, 3rd Floor
Cambridge, Massachusetts

Re: Registration of Securities by CAMP4 Therapeutics Corporation

Ladies and Gentlemen:

We have acted as counsel to CAMP4 Therapeutics Corporation, a Delaware corporation (the "Company"), in connection with the registration statement on Form S-3 (the "Registration Statement") filed on the date hereof by the Company with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration under the Securities Act and the proposed offer and sale from time to time pursuant to Rule 415 under the Securities Act, by certain stockholders of the Company identified in the Registration Statement, of up to (i) 10,795,804 shares of common stock, \$0.0001 par value per share, of the Company (the "Common Stock") and (ii) 21,925,368 shares of Common Stock issuable upon the exercise of pre-funded warrants, with an exercise price of \$0.0001 per share (the "Pre-Funded Warrants") and together with the Common Stock, the "Securities"), which were sold pursuant to that certain Securities Purchase Agreement, dated as of September 9, 2025 and amended as of August 3, 2026, by and among the Company and the purchasers named therein.

In connection with this opinion letter, we have examined such certificates, documents and records and have made such investigation of fact and such examination of law as we have deemed appropriate in order to enable us to render the opinions set forth herein. In conducting such investigation, we have relied, without independent verification, upon certificates of officers of the Company, public officials and other appropriate persons.

The opinions expressed below are limited to the Delaware General Corporation Law.

Based upon and subject to the foregoing and the assumptions, qualifications and limitations set forth below, we are of the opinion that the Securities have been duly authorized by the Company and are validly issued, fully paid and non-assessable.

In rendering the opinions set forth above, we have assumed that (i) the Registration Statement and any amendments thereto will have become effective under the Securities Act, and no stop order suspending the Registration Statement's effectiveness will have been issued and

remain in effect each time the Securities are offered and sold as contemplated by the Registration Statement, and (ii) all Securities will be offered and sold in compliance with applicable federal and state securities laws and in the manner stated in the Registration Statement and the applicable prospectus supplement.

We hereby consent to the filing of this opinion letter as an exhibit to the Registration Statement and to the use of our name therein and in the related prospectus under the caption “Legal Matters.” In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Ropes & Gray LLP

Ropes & Gray LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3) and related Prospectus of Camp4 Therapeutics Corporation for the registration of 10,795,804 shares of its common stock and 21,925,368 shares of its common stock issuable upon the exercise of pre-funded warrants and to the incorporation by reference therein of our report dated March 5, 2026, with respect to the consolidated financial statements of Camp4 Therapeutics included in its Annual Report (Form 10-K) for the year ended December 31, 2025, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts

August 6, 2026