As filed with the United States Securities and Exchange Commission on November 16, 2026

Registration No. 333-298837

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

POST-EFFECTIVE AMENDMENT NO. 1
TO
FORM S-1
ON FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

MapLight Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**83-2163243**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

800 Chesapeake Drive
Redwood City, California 94063
(617) 984-6300
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Christopher A. Kroeger, M.D.
MapLight Therapeutics, Inc.
800 Chesapeake Drive
Redwood City, California 94063
(617) 984-6300
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Christian E. Plaza **Mark Ballantyne** **Madison A. Jones** **David Brinton** **Cooley LLP** **11951 Freedom Drive** **Reston, Virginia 20190** **(703) 456-8000**	**Kristopher L. Hanson** **MapLight Therapeutics, Inc.** **800 Chesapeake Drive** **Redwood City, California 94063** **(617) 984-6300**

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 the 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 which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 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.

EXPLANATORY NOTE

On September 9, 2026, MapLight Therapeutics, Inc., or the Company, filed a registration statement on Form S-1 (File No. 333-298837), or the Registration Statement, with the Securities and Exchange Commission, or the SEC, which was amended on September 18, 2026 and was declared effective on September 23, 2026.

The Registration Statement related to the offer, sale or other disposition from time to time of up to 13,181,055 shares of the Company's common stock, $0.0001 par value per share, or the common stock, by the selling stockholders named in the prospectus included in the Registration Statement or their permitted transferees, or the selling stockholders, consisting of (i) 9,197,887 shares of common stock and (ii) 3,983,168 shares of common stock issuable upon the exercise of outstanding pre-funded warrants to purchase shares of common stock held by certain of the selling stockholders, all of which were issued by the Company in a private placement, which closed on August 14, 2026.

The Company is now filing this Post-Effective Amendment No. 1, or the Post-Effective Amendment, to the Registration Statement to (i) convert the Registration Statement into a registration statement on Form S-3, (ii) update the number of securities being offered pursuant to the prospectus contained herein, (iii) update information regarding the selling stockholders named in the prospectus, and (iv) update certain information regarding the Company. No additional securities are being registered under this Post-Effective Amendment. All applicable registration fees were paid at the time of the initial filing of the Registration Statement.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is declared effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED NOVEMBER 16, 2026

PROSPECTUS

13,160,261 Shares



Common Stock

This prospectus relates to the proposed offer and resale or other disposition from time to time by the selling stockholders identified in this prospectus of up to an aggregate of 13,160,261 shares of common stock, par value $0.0001 per share, of MapLight Therapeutics, Inc., held by the selling stockholders, which consists of (i) 9,177,093 shares of common stock and (ii) 3,983,168 shares of common stock issuable upon the exercise of outstanding pre-funded warrants to purchase shares of common stock held by certain of the selling stockholders, all of which were issued by us in a private placement, or the Private Placement, which closed on August 14, 2026.

We have two series of common stock: the voting common stock offered hereby and non-voting common stock. We are registering the offer and resale of shares of voting common stock, and unless otherwise noted, all references in this prospectus to our "common stock" refer to our voting common stock.

We are registering the offer and sale of the shares of common stock from time to time by the selling stockholders to satisfy the registration rights they were granted in connection with the Private Placement. Our registration of the resale of the shares of common stock covered by this prospectus does not mean that the selling stockholders will offer or sell all or any of the shares of common stock. The selling stockholders may offer, sell or distribute all or a portion of their shares of common stock from time to time directly or indirectly through one or more underwriters, broker-dealers or agents, and in one or more public or private transactions, which may involve crosses or block transactions. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale or at negotiated prices. See the section entitled "Plan of Distribution" for more information. We will not receive any proceeds from any sale of common stock by the selling stockholders pursuant to this prospectus. We have agreed to bear the expenses in connection with the registration of the resale of the shares of common stock to be offered by this prospectus by the selling stockholders except for any underwriting discounts and commissions relating to the sale of common stock, which will be borne by the selling stockholders.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "MPLT." On November 13, 2026, the last reported sale price for our common stock on the Nasdaq Global Select Market was $7.25 per share.

We are an "emerging growth company" and a "smaller reporting company" as defined under the U.S. federal securities laws and, as such, we have elected to comply with certain reduced reporting requirements for this prospectus and the documents incorporated by reference herein and may elect to do so in future filings. See the section titled "Prospectus Summary—Implications of Being an Emerging Growth Company and a Smaller Reporting Company."

Investing in our common stock involves risks. See the section titled "Risk Factors" beginning on page 6 of this prospectus and under similar headings in the documents incorporated by reference into this prospectus to read about factors you should consider before buying shares of our common stock.

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

The date of this prospectus is , 2026

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ABOUT THIS PROSPECTUS

This prospectus relates to the resale by the selling stockholders identified in this prospectus under the caption "Selling Stockholders," from time to time, of up to an aggregate of 13,160,261 shares of common stock. We are not selling any shares of common stock under this prospectus, and we will not receive any proceeds from the sale of shares of common stock offered hereby by the selling stockholders.

Neither we, nor the selling stockholders, have authorized anyone to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or shares are sold on a later date. Our business, financial condition, results of operations and prospects may have changed since those dates. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference filed with the Securities and Exchange Commission, or the SEC, before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in a document incorporated by reference is inconsistent with a statement in another document incorporated by reference having a later date, the statement in the document having the later date modifies or supersedes the earlier statement.

The selling stockholders are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where it is lawful to do so. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any shares other than the registered shares to which it relates, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy shares in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. A prospectus supplement may add to, update or change the information contained in this prospectus. You should read both this prospectus and any applicable prospectus supplement together with additional information described below under the heading "Where You Can Find Additional Information" or incorporated by reference herein as described under the heading "Incorporation of Certain Information by Reference."

This prospectus incorporates by reference market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading "Risk Factors" contained in this prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

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

MapLight Therapeutics is our trademark and is used in this prospectus. This prospectus also includes trademarks, trade names and service marks that are the property of other organizations. Solely for convenience, the trademarks and trade names referred to in this prospectus appear without the ® and ™ symbol, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to these trademarks and trade names.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents we have filed with the SEC that are incorporated by reference herein contain forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical fact contained in this prospectus, including statements regarding our plans, objectives, goals, strategies, future events, future revenues or performance, financing needs, plans, or intentions relating to product candidates and markets and business trends and other information referred to under the sections titled "Prospectus Summary" and "Risk Factors" in this prospectus and the sections titled "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business" in our Annual Report on Form 10-K for the year ended December 31, 2025 and "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2026, which are incorporated by reference herein, are forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections. In some cases, you can identify forward-looking statements because they contain words such as "anticipate," "believe," "can," "contemplate," "continue," "could," "design," "estimate," "expect," "intend," "may," "might," "objective," "plan," "potential," "predict," "project," "shall," "should," "target," "will," or "would," or the negative of these words or other similar terms or expressions.

These statements involve known and unknown risks, uncertainties, and other 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. Forward-looking statements include, but are not limited to, statements about:

- the timing, progress and results of our 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, and the period during which the results of the trials will become available;
- the timing of any regulatory submissions, initiation of and enrollment in clinical trials and timing of expected clinical results for our product candidates;
- our ability to identify patients with the conditions 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 manufacturing capabilities and strategy, including the scalability and commercial viability of our manufacturing methods and processes;
- our expectations regarding the scope of any potential indications for our product candidates;
- our ability to successfully receive regulatory approval for, and commercialize, our product candidates;
- our ability to identify and develop future product candidates;
- our ability to obtain additional capital and the sufficiency of our existing cash, cash equivalents and investments to fund our future operating expenses and capital expenditure requirements;
- our ability to establish or maintain collaborations or strategic relationships;
- our ability to identify, recruit and retain key personnel;
- our ability to protect and enforce our intellectual property position for our product candidates, and the scope of such protection;
- our financial performance;
- our anticipated use of our existing cash, cash equivalents and investments;
- the impact of laws and regulations; and

- our expectations regarding the time during which we will be an emerging growth company under the JOBS Act.

These forward-looking statements reflect our management's beliefs and views with respect to future events and are based on estimates and assumptions as of the date of this prospectus and are subject to risks and uncertainties. In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements. We discuss many of the risks associated with the forward-looking statements in this prospectus in greater detail under the heading "Risk Factors" included in this prospectus and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2026, which is incorporated by reference herein. You should evaluate all forward-looking statements made in this prospectus in the context of these risks and uncertainties. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Given these uncertainties, you should not place undue reliance on these forward-looking statements.

You should carefully read this prospectus and the documents that we have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in this prospectus by these cautionary statements.

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.

PROSPECTUS SUMMARY

This summary highlights selected information contained or incorporated by reference elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including the information incorporated by reference herein. You should carefully consider, among other things, the section titled "Risk Factors" included elsewhere in this prospectus and the risk factors incorporated by reference herein, the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our consolidated financial statements and the related notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2025 and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2026, which are incorporated by reference herein. Some of the statements in this summary constitute forward-looking statements; see the section titled "Special Note Regarding Forward-Looking Statements."

Business Overview

We are a clinical-stage biopharmaceutical company focused on improving the lives of patients suffering from debilitating central nervous system, or CNS, disorders. We were founded by globally recognized leaders in psychiatry and neuroscience research to address the lack of circuit-specific pharmacotherapies available for patients. Our discovery platform holds the potential to fill this void by identifying neural circuits causally linked to disease and targeting those circuits for therapeutic modulation. We believe our deep understanding of these causal links between the modulation of defined neural circuits and the resulting changes in disease-specific behaviors will enable us to develop therapeutics that can deliver efficacy, safety, tolerability and ease-of-use advantages to patients and prescribers.

Our lead product candidate, ML-007C-MA, is a fixed-dose combination of an M1/M4 muscarinic agonist, ML-007, co-formulated with a peripherally acting anticholinergic, or PAC, which we are initially developing for the treatment of schizophrenia and Alzheimer's disease psychosis, or ADP. ML-007C-MA is designed to activate both M1 and M4 muscarinic receptors centrally to drive efficacy, while synchronizing the pharmacokinetics of the agonist and antagonist components to mitigate peripheral cholinergic side effects. ML-007 alone, co-administered or co-formulated with the PAC, has been evaluated in four Phase 1 trials, with a total of 270 healthy participants enrolled and more than 1,500 doses of ML-007 administered. Based on our clinical and preclinical data, we believe that ML-007C-MA has demonstrated the potential to be a well-tolerated treatment option with convenient dosing, while achieving or exceeding cerebrospinal fluid, or CSF, exposures expected to result in improvement across key symptom domains. In July 2026, we announced positive topline results from ZEPHYR, a Phase 2 trial evaluating ML-007C-MA for the treatment of schizophrenia. Based on the results of ZEPHYR, we intend to engage with the U.S. Food and Drug Administration, or the FDA, in an end-of-Phase 2 meeting to discuss the path forward for ML-007C-MA in schizophrenia, including the design of a Phase 3 trial which, together with ZEPHYR, would be intended to support an initial New Drug Application, or NDA, submission. We have begun planning and site identification for this additional, confirmatory trial.

We are also conducting VISTA, a Phase 2 trial evaluating ML-007C-MA for the treatment of ADP, and we expect to report topline results in the second half of 2027. In December 2025, ML-007C-MA was granted Fast Track designation by the FDA for the treatment of hallucinations and delusions associated with ADP.

Our second clinical-stage product candidate, ML-004, is a 5-HT1B/1D agonist that we are developing for the treatment of social communication deficit and/or irritability in autism spectrum disorder, or ASD. In June 2026, we announced topline results from IRIS, a Phase 2 trial evaluating the efficacy, safety and tolerability of ML-004 in adults and adolescents with ASD. Based on the results of IRIS, we intend to engage with the FDA in an end-of-Phase 2 meeting to determine the next steps for development of ML-004 in irritability associated with ASD, after which we intend to evaluate the path forward for ML-004, including potential strategic collaborations and/or funding alternatives.

Risk Factor Summary

Investing in our common stock involves significant risks. You should carefully consider the risks described in the section titled "Risk Factors" immediately following this prospectus summary and in the section titled "Risk Factors" included in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2026 before making a decision to invest in our common stock. If we are unable to successfully address these risks and challenges, our business, financial condition, results of operations, or prospects could be materially and adversely affected. In such case, the trading price of our common stock would likely decline, and you may lose all or part of your investment. Below is a summary of some of the risks we face.

- We are a clinical-stage biopharmaceutical company with a limited operating history and no history of commercializing products, which may make it difficult to evaluate our approach to the discovery and development of product candidates and the prospects for our future viability.
- We have incurred substantial losses since our inception. We anticipate incurring substantial and increasing losses for the foreseeable future and may never achieve or maintain profitability.
- We will require substantial additional financing to achieve our goals, and failure to obtain additional capital when needed, or on acceptable terms, could cause us to delay, limit, reduce or terminate our product development or future commercialization efforts.
- If we are unable to successfully identify, develop and commercialize any product candidates, or experience significant delays in doing so, our business, financial condition, results of operations and prospects will be materially and adversely affected.
- The regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time-consuming, expensive and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed.
- We may incur unexpected costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.
- We are subject to various U.S. federal, state and foreign healthcare laws and regulations, which could increase compliance costs, and our failure to comply with these laws and regulations could harm our reputation, subject us to significant fines and liability or otherwise adversely affect our business.
- Competitive products may reduce or eliminate the commercial opportunity for our product candidates for our current or future indications. If our competitors develop technologies or product candidates more rapidly than we do, or their technologies or product candidates are more effective or safer than ours, our ability to develop and successfully commercialize our product candidates may be adversely affected.
- We rely, and expect to continue to rely, on third parties, including independent clinical investigators, contracted laboratories and contract research organizations, to conduct our preclinical studies and clinical trials. If these third parties do not successfully carry out their contractual duties, comply with applicable regulatory requirements or meet expected deadlines, our development programs and our ability to seek or obtain regulatory approval for or commercialize our product candidates may be delayed and our business could be substantially harmed.
- Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.
- If we are unable to obtain and maintain sufficient intellectual property protection for our current or future product candidates or if the scope of the intellectual property protection we currently have or obtain in the future is not sufficiently broad, our competitors could develop and commercialize product candidates similar or identical to ours, and our ability to successfully commercialize our current or future product candidates may be impaired.

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

Corporate Information

We were incorporated under the laws of the State of Delaware in November 2018 as Alvarado Therapeutics, Inc. In August 2019, we changed our name to MapLight Therapeutics, Inc. Our principal executive offices are located at 800 Chesapeake Drive, Redwood City, California 94063, and our telephone number is (617) 984-6300. Our website address is *www.maplightrx.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.

Private Placement of Securities

On August 13, 2026, we entered into a securities purchase agreement with certain institutional investors pursuant to which we agreed to sell and issue (i) 9,197,887 shares of common stock, or the Shares, and (ii) with respect to certain purchasers, in lieu of shares of common stock, pre-funded warrants, or the Pre-Funded Warrants, to purchase 3,983,168 shares of common stock, or the Warrant Shares, which is collectively referred to in this prospectus as the Private Placement. The closing of the Private Placement occurred on August 14, 2026. The purchase price per Share was $11.38 and the purchase price for the Pre-Funded Warrants was the purchase price per Share minus $0.0001 per Warrant Share underlying the Pre-Funded Warrants. We received gross proceeds of approximately $150.0 million from the Private Placement, before deducting placement agent fees and estimated offering expenses.

The Pre-Funded Warrants have a per share exercise price of $0.0001, subject to proportional adjustments in the event of stock splits or combinations or similar events. The Pre-Funded Warrants will not expire until exercised in full. The Pre-Funded Warrants may not be exercised if the aggregate number of shares of common stock beneficially owned by the holder thereof immediately following such exercise would exceed a specified beneficial ownership limitation; provided, however, that a holder that holds less than 20% of our common stock prior to such exercise may increase or decrease the beneficial ownership limitation by giving 61 days' notice to us, but not to any percentage in excess of 19.99%, or, for Catalyst4, Inc., 49.99%.

Also on August 13, 2026, we entered into a registration rights agreement with the purchasers in the Private Placement, or the Registration Rights Agreement. Under the terms of the Registration Rights Agreement, we agreed to prepare and file, within 30 days after the closing of the Private Placement, one or more registration statements with the SEC to register for resale the Shares and the Warrant Shares issuable upon exercise of the Pre-Funded Warrants sold in the Private Placement, and to cause the applicable registration statements to become effective within a specified period set forth in the Registration Rights Agreement. The Registration Statement was filed, and this Post-Effective Amendment is being filed, to satisfy the requirements of the Registration Rights Agreement.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We are an "emerging growth company," as defined in Section 2(a) of the Securities Act of 1933, as amended, or the Securities Act, as modified by the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including relief from the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, less extensive disclosure obligations regarding executive compensation in our registration statements, periodic reports and proxy statements, exemptions from the requirements to hold a nonbinding advisory vote on executive compensation, and exemptions from stockholder approval of any golden parachute payments not previously approved. We may

also elect to take advantage of other reduced reporting requirements in future filings. As a result, our stockholders may not have access to certain information that they may deem important and the information that we provide to our stockholders may be different than, and not comparable to, information presented by other public reporting companies. We could remain an emerging growth company until the earlier of (i) the last day of the year following the fifth anniversary of the closing of our initial public offering, (ii) the last day of the year in which we have total annual gross revenue of at least $1.235 billion, (iii) the last day of the year in which we are deemed to be a "large accelerated filer" as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, which would occur if the market value of our common stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year or (iv) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

In addition, the JOBS Act provides that an emerging growth company may take advantage of the extended transition period provided in the Securities Act for complying with new or revised accounting standards. An emerging growth company may therefore delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption and, as a result, will not be subject to the same implementation timing for new or revised accounting standards as are required of other public companies that are not emerging growth companies, which may make comparison of our consolidated financial information to those of other public companies more difficult.

We are also a "smaller reporting company," as defined in the Exchange Act. We will continue to be a smaller reporting company as long as (i) the market value of our common stock held by non-affiliates is less than $250.0 million or (ii) our annual revenue is less than $100.0 million during the most recently completed fiscal year and the market value of our common stock held by non-affiliates is less than $700.0 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

THE OFFERING

Issuer	MapLight Therapeutics, Inc.
Common stock offered by the selling stockholders	Up to an aggregate of 13,160,261 shares.
Shares of common stock and non-voting common stock outstanding	55,669,897 shares of common stock (of which 2,727,511 shares are non-voting common stock) as of September 30, 2026.
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 proceeds from the sale of the shares of common stock covered by this prospectus. See the section titled "Use of Proceeds" for additional information.
Offering Price	The selling stockholders will offer the shares of common stock offered by this prospectus at the prevailing market prices or at privately negotiated prices.
Risk factors	You should carefully read and consider the information set forth in the section titled "Risk Factors," together with all of the other information set forth in this prospectus or incorporated by reference herein, before deciding whether to invest in our common stock.
Nasdaq Global Select Market trading symbol	"MPLT"

For additional information concerning the offering, see "Plan of Distribution" beginning on page 12.

The number of shares of our common stock and non-voting common stock outstanding as of September 30, 2026 excludes:

- 3,983,168 shares of our common stock issuable upon the exercise of pre-funded warrants outstanding as of September 30, 2026 at an exercise price of $0.0001 per share;
- 4,807,393 shares of our common stock issuable upon the exercise of options outstanding as of September 30, 2026 at a weighted-average exercise price of $14.95 per share;
- 3,936,911 shares of our common stock issuable upon the vesting and settlement of restricted stock units, or RSUs, outstanding as of September 30, 2026;
- 2,229,491 shares of common stock reserved for future issuance under our 2025 Equity Incentive Plan, or the 2025 Plan, as of September 30, 2026, as well as any future automatic annual increases in the number of shares of common stock reserved for issuance under our 2025 Plan;
- 751,081 shares of common stock reserved for future issuance under our 2025 Employee Stock Purchase Plan, or the ESPP, as of September 30, 2026, as well as any future automatic annual increases in the number of shares of common stock reserved for future issuance under our ESPP; and
- up to 35,476 additional shares of our common stock potentially issuable pursuant to the Asset Purchase Agreement with NeuroSolis, Inc., dated as of June 18, 2020, upon our achievement of specified development and regulatory milestones.

Unless otherwise indicated, all information contained in this prospectus assumes no exercise of the outstanding pre-funded warrants and options and no vesting of the RSUs described above.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, as well as the risks and uncertainties set forth under the heading "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2026, which is incorporated by reference herein, and all of the other information contained in this prospectus and the documents incorporated by reference herein before making an investment decision. If any of the following risks actually occurs, our business, prospects, operating results, and financial condition could suffer materially, the trading price of our common stock could decline, and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial also may materially and adversely affect our business, prospects, operating results, and financial condition.

Risks Related to the Ownership of our Common Stock

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

Sales of a substantial number of shares of our common stock in the public market, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. On August 14, 2026, we issued (i) 9,197,887 shares of common stock and (ii) pre-funded warrants to purchase 3,983,168 shares of common stock in the Private Placement. We have agreed to register for resale with the SEC such shares of common stock. The registration statement of which this prospectus forms a part has been filed to satisfy this obligation. Prior to the date of this prospectus, a portion of such shares have been sold, such that as of November 1, 2026, a total of 9,177,093 shares remained unsold by the selling stockholders and are being offered by this prospectus. The sale of a significant amount of these shares of common stock in the open market, or the perception that these sales may occur, could cause the market price of our common stock to decline or become highly volatile.

All of our outstanding options, RSUs and shares that are otherwise issuable under our equity compensation plans are registered under the Securities Act on registration statements on Form S-8. These shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates, to the extent applicable.

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 proceeds from any sales of shares of our common stock by the selling stockholders.

SELLING STOCKHOLDERS

The shares of common stock being offered by the selling stockholders consist of the Shares and the Warrant Shares issuable upon exercise of the Pre-Funded Warrants issued to the selling stockholders in the Private Placement. For additional information regarding the issuance of the Shares and the Pre-Funded Warrants in the Private Placement, see the section "Prospectus Summary—Private Placement of Securities" above. We are registering the resale of the Shares and the Warrant Shares in order to permit such selling stockholders to offer the Shares and Warrant Shares for resale from time to time.

The table below lists the selling stockholders and other information regarding their ownership of the Shares and Warrant Shares offered hereby. The second column lists the number of shares of common stock beneficially owned by the selling stockholders as of November 1, 2026. The third column lists the shares of common stock being offered by the selling stockholders pursuant to this prospectus. The fourth column assumes the sale of all of the shares of common stock offered by the selling stockholders pursuant to this prospectus. The selling stockholders may sell all, some or none of their shares of common stock in this offering. See "Plan of Distribution" for additional information.

Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the selling stockholders have sole voting and investment power with respect to all shares of common stock that they own, subject to applicable community property laws. Beneficial ownership for the purposes of the table below is determined in accordance with the rules and regulations of the SEC. These rules generally provide that a person is the beneficial owner of securities if such person has or shares the power to vote or direct the voting thereof, or to dispose or direct the disposition thereof, or has the right to acquire such powers within 60 days. Percentage of beneficial ownership is based on 53,480,385 shares of common stock outstanding as of November 1, 2026.

Except as otherwise disclosed herein, the selling stockholders do not have, and within the past three years have not had, any position, office or other material relationship with us.

			Beneficial Ownership After This Offering	
Name of Selling Stockholder	Shares of Common Stock Beneficially Owned Prior to This Offering	Number of Shares Being Offered in This Offering(1)	Number of Shares	Percent of Shares (%)
Catalyst4, Inc.(2)	28,235,375	7,328,686	20,906,689	39.1
Forbion Growth Opportunities Fund III Coöperatief U.A.(3)	4,428,328	755,711	3,672,617	6.9
Entities affiliated with Nan Fung Group Holdings Limited(4)	3,966,255	1,054,481	2,911,774	5.4
Entities affiliated with Baker Bros. Advisors LP(5)	2,221,245	1,054,482	1,166,763	2.2
Entities affiliated with Goldman Sachs & Co. LLC(6)	1,942,781	878,734	1,064,047	2.0
Avego Bioscience Capital, L.P.(7)	615,703	131,810	483,893	*
Deep Track Biotechnology Master Fund, Ltd.(8)	1,297,307	1,297,307	—	—
Entities affiliated with ADAR1 Capital Management, LLC(9)	810,279	659,050	151,229	*

* Represents beneficial ownership of less than 1.0%.

(1) For the purpose of the calculations of the number of shares being offered pursuant to this prospectus, we have assumed the exercise in full of all of the Pre-Funded Warrants without regard to any beneficial ownership limitations on exercise as described above and as set forth in the Pre-Funded Warrants.

(2) The number of shares of common stock beneficially owned prior to this offering consists of (i) 25,306,689 shares of common stock (including 4,400,000 Shares issued in the Private Placement) and (ii) 2,928,686 Warrant Shares issuable upon the exercise of Pre-Funded Warrants held by Catalyst4, Inc. ("Catalyst4"). Robert Brown, Ekemini Riley and Mark Vorsatz are members of the board of directors of Catalyst4 and may be deemed to have shared voting and dispositive power over the shares held by Catalyst4. The principal business address of Catalyst4 and the individuals named in this footnote is 555 Bryant Street, #376, Palo Alto, California 94301. The rights of Catalyst4 to designate directors described below terminated in connection with our initial public offering. In connection with our sale of Series C convertible preferred stock in July 2023, we entered into an amended and restated voting agreement with certain stockholders, including Catalyst4, which granted Catalyst4 the right to designate one member of our board of directors and to jointly designate, with NFLS Beta Limited, one member of our board of directors, pursuant to which Catalyst4 designated George Pavlov and Timothy Garnett to serve on our board of directors. In connection with our sale of additional shares of Series C convertible preferred stock in October 2023, we entered into an amendment to the amended and restated voting agreement, which granted Catalyst4 the right to designate an additional member of our board of directors. In connection with our sale of Series D convertible preferred stock in July 2025, we entered into an amended and restated voting agreement with certain stockholders, including Catalyst4, which granted Catalyst4 the right to designate three members of our board of directors, pursuant to which Catalyst4 designated Timothy Garnett, George Pavlov and Maria Walker to serve on our board of directors. In connection with our sale of additional shares of Series D convertible preferred stock in September 2025, we entered into an amendment to the amended and restated voting agreement, which granted Catalyst4 the right to designate an additional member of our board of directors. In October 2023, we entered into an assignment and assumption agreement with Stellaromics, Inc. ("Stellaromics") for the transfer of certain intellectual property and received an equity investment in Stellaromics common stock representing 9.8% of the capital stock of Stellaromics; as of September 30, 2026, we held approximately 2.9% of the outstanding capital stock of Stellaromics. Also in October 2023, Catalyst4 became the largest stockholder of Stellaromics, holding approximately 38.4% of its outstanding capital stock; as of September 30, 2026, Catalyst4 holds a controlling interest of the outstanding capital stock of Stellaromics. George Pavlov, a member of our board of directors, and Christopher A. Kroeger, M.D., our Chief Executive Officer, serve as members of the board of directors of Stellaromics. Dr. Kroeger's seat on the board of directors of Stellaromics is determined by the stockholders holding a majority of the outstanding shares of common stock of Stellaromics.

(3) The number of shares of common stock beneficially owned prior to this offering consists of 4,428,328 shares of common stock (including 755,711 Shares issued in the Private Placement) held by Forbion Growth Opportunities Fund III Coöperatief U.A. ("Forbion Growth"). Forbion Growth III Management B.V. ("Forbion Management"), is the director of Forbion Growth and may be deemed to have voting and dispositive power over the securities that are held by Forbion Growth. Investment and divestment decisions with respect to Forbion Growth are made by its alternative investment fund manager FCPM III Services B.V. ("FCPM") upon recommendation by its investment committee, consisting of Nanna Lüneborg, a member of our board of directors, Sander Slootweg, Dirk Kersten, Wouter Joustra, Jasper Bos, Carlo Incerti, Martien van Osch and Geert-Jan Mulder. The natural persons on the board of FCPM are Dirk Kersten, Machteld Groeneveld, Geert-Jan Mulder, Sander Slootweg and Martien van Osch. FCPM directs the Forbion Management in relation to Forbion Growth. The members of the investment committee have an indirect interest in the Forbion Growth. The principal business address of the Forbion Management, the Forbion Growth, FCPM and the individuals named in this footnote is Gooimeer 2-35, 1411 DC Naarden, the Netherlands. In connection with our sale of Series D convertible preferred stock in July 2025, we entered into an amended and restated voting agreement with certain stockholders, including Forbion Growth, which granted Forbion Growth the right to designate one member of our board of directors, pursuant to which Forbion Growth designated Nanna Lüneborg, Ph.D. to serve on our board of directors. Dr. Lüneborg has served as General Partner at Forbion since September 2021. The rights of Forbion Growth to designate a director terminated in connection with our initial public offering.

(4) The number of shares of common stock beneficially owned prior to this offering consists of (i) 611,446 shares of common stock held by Pivotal bioVenture Partners Fund II, L.P. ("Pivotal II"), (ii) 671,606 shares

of common stock held by NFLS Beta Limited ("NFLS Beta"), and (iii) 2,683,203 shares of common stock (including 1,054,481 Shares issued in the Private Placement) held by Permwell Management Limited ("Permwell"). Pivotal bioVenture Partners Fund II G.P. Ltd ("Pivotal II GP") is the general partner of Pivotal II, and is wholly owned by Pivotal Partners Ltd ("Pivotal Partners"). Pivotal Partners is wholly owned by Pivotal Life Sciences Holdings Limited ("Pivotal Life Sciences" and together with Pivotal II, Pivotal II GP and Pivotal Partners, the "Pivotal Entities"). Pivotal Life Sciences is wholly owned by Nan Fung Life Sciences Holdings Limited ("Nan Fung Life Sciences"), and Nan Fung Life Sciences is wholly owned by NF Investment Holdings Limited ("NFIHL"), which is wholly owned by Nan Fung Group Holdings Limited ("NFGHL"). NFLS Beta is wholly owned by NFLS Platform Holdings Limited ("NFLS Platform"), which is wholly owned by Nan Fung Life Sciences. Permwell is wholly owned by NFIHL. The address of the principal business office of each of the Pivotal Entities is 501 Second Street, Suite 200, San Francisco, CA 94107. The principal business address of each of NFGHL and Permwell is 17th Floor, AIRSIDE, 2 Concorde Road, Kai Tak, Hong Kong. The registered office address of each of NFIHL, Nan Fung Life Sciences and NFLS Beta is Vistra Corporate Services Centre, Wickhams Cay II, Road Town, Tortola, VG1110, British Virgin Islands. The registered office address of NFLS Platform is Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KY1-1111, Cayman Islands. In connection with our sale of Series C convertible preferred stock in July 2023, we entered into an amended and restated voting agreement with certain stockholders, including NFLS Beta, which granted NFLS Beta the right to designate one member of our board of directors and to jointly designate, with Catalyst4, one member of our board of directors, pursuant to which NFLS Beta designated Peter Bisgaard and Timothy Garnett to serve on our board of directors. In connection with our sale of Series D convertible preferred stock in July 2025, we entered into an amended and restated voting agreement with certain stockholders, including NFLS Beta, which granted NFLS Beta the right to designate one member of our board of directors, pursuant to which NFLS Beta designated Peter Bisgaard to serve on our board of directors. Mr. Bisgaard served as a member of our board of directors from February 2019 to September 2025. The rights of NFLS Beta to designate a director terminated in connection with our initial public offering.

(5) The number of shares of common stock beneficially owned prior to this offering consists of (i)(a) 1,097,397 shares of common stock and (b) 1,005,774 Warrant Shares issuable upon the exercise of Pre-Funded Warrants held by Baker Brothers Life Sciences, L.P. ("Life Sciences") and (ii) (a) 69,366 shares of common stock and (b) 48,708 Warrant Shares issuable upon the exercise of Pre-Funded Warrants held by 667, L.P. ("667" and, together with Life Sciences, the "BBA Funds"). Baker Bros. Advisors LP ("BBA") is the management company and investment advisor to the BBA Funds and has sole voting and investment power with respect to these securities. Baker Bros. Advisors (GP) LLC (the "GP") is the sole general partner of BBA. Julian C. Baker and Felix J. Baker are managing members of the GP. The GP, Julian C. Baker, Felix J. Baker and BBA may be deemed to be beneficial owners of the securities directly held by the BBA Funds. The business address of BBA, GP, Julian C. Baker and Felix J. Baker is 860 Washington Street, 3rd Floor, New York, NY 10014.

(6) The number of shares of common stock beneficially owned prior to this offering consists of (i) 373,751 shares of common stock (including 169,051 Shares issued in the Private Placement) held by Broad Street Principal Investments LLC ("Broad Street"), (ii) 535,073 shares of common stock (including 242,017 Shares issued in the Private Placement) held by West Street Life Sciences I, LP ("WSLS I"), (iii) 143,482 shares of common stock (including 64,898 Shares issued in the Private Placement) held by WSLS Emp Offshore Investments, L.P. ("WSLS Emp Offshore"), (iv) 380,366 shares of common stock (including 172,042 Shares issued in the Private Placement) held by WSLS Emp Onshore Investments L.P. ("WSLS Emp Onshore"), and (v) 510,109 shares of common stock (including 230,726 Shares issued in the Private Placement) held by WSLS Offshore Investments, SLP ("WSLS Offshore SLP"). Goldman Sachs Asset Management, L.P. ("GSAM LP"), as the investment manager of WSLS I, WSLS Emp Offshore, WSLS Emp Onshore, and WSLS Offshore SLP, may be deemed to have voting and investment power over the shares held of record by these entities. Goldman Sachs & Co. LLC ("GS&Co"), as the manager of Broad Street, may be deemed to have voting and investment power over the shares held of record by Broad Street. GS&Co and GSAM LP are direct and indirect wholly-owned subsidiaries of The Goldman Sachs Group, Inc. ("GS Group"). GS Group is a public entity, and its common stock is publicly traded on the New York

Stock Exchange. The shares were acquired in the ordinary course of the holders' investment business and not for the purpose of resale or distribution. GS&Co, GSAM LP or GS Group may be deemed to beneficially own the securities held by Broad Street, WSLS I, WSLS Emp Offshore, WSLS Emp Onshore, and WSLS Offshore SLP. The address of GS Group, GS&Co, GSAM LP, Broad Street, WSLS I, WSLS Emp Offshore, and WSLS Emp Onshore is 200 West Street, New York, New York 10282. The address of WSLS Offshore SLP is 12E, Rue Guillaume Kroll, 1882 Luxembourg.

(7) The number of shares of common stock beneficially owned prior to this offering consists of 615,703 shares of common stock (including 131,810 shares issued in the Private Placement) held by Avego Bioscience Capital, L.P. ("Avego Bioscience"). Avego Bioscience Capital GP, LLC ("Avego Bioscience GP"), as the general partner of Avego Bioscience, may be deemed to beneficially own the shares beneficially owned by Avego Bioscience. Avego Management LLC ("Avego Management") and Velan Capital Investment Management LP ("Velan Capital") are co-investment managers of Avego Bioscience and may be deemed to beneficially own the shares beneficially owned by Avego Bioscience. Velan Capital Management LLC ("Velan IM GP"), as the general partner of Velan Capital, may be deemed to beneficially own the shares beneficially owned by Avego Bioscience. Balaji Venkataraman, as a Managing Member of each of Avego Bioscience GP, Avego Management and Velan IM GP, may be deemed to beneficially own the shares beneficially owned by Avego Bioscience. Adam Morgan, as a Managing Member of Velan IM GP, may be deemed to beneficially own the shares beneficially owned by Avego Bioscience. The business address of Avego Bioscience, Avego Bioscience GP, Avego Management, Velan Capital and Velan IM GP is 100 North Main Street, Suite 301, Alpharetta, GA 30009.

(8) The number of shares of common stock beneficially owned prior to this offering consists of 1,297,307 Shares issued in the Private Placement held by Deep Track Biotechnology Master Fund, Ltd. ("Deep Track"). Deep Track Capital, LP ("Deep Track Capital") is the investment manager of Deep Track, and Deep Track Capital GP, LLC ("Deep Track GP", and together with Deep Track and Deep Track Capital, the "Deep Track Entities") is the general partner of Deep Track Capital. David Kroin is the managing member of Deep Track GP. The business address of the Deep Track Entities and Mr. Kroin is 200 Greenwich Ave, 3rd Floor, Greenwich, CT 06830.

(9) The number of shares of common stock beneficially owned prior to this offering consists of (i) 683,662 shares of common stock (including 571,641 Shares issued in the Private Placement) held by ADAR1 Partners, LP ("ADAR1"), (ii) 105,109 shares of common stock (including 87,409 Shares issued in the Private Placement) held by Spearhead Insurance Solutions IDF, LLC—Series ADAR1 ("Spearhead"); and (iii) 21,508 shares of common stock owned directly by separately managed accounts. ADAR1 Capital Management, LLC ("ADAR1 LLC"), the investment advisor of ADAR1 and the sub-advisor of Spearhead and the separately managed accounts, has voting and investment control of the common stock held by ADAR1, Spearhead and the separately managed accounts. ADAR1 Capital Management GP, LLC ("ADAR1 GP") is the general partner of ADAR1. Daniel Schneeberger is the manager of ADAR1 LLC and ADAR1 GP. The address of ADAR1, ADAR1 LLC and Mr. Schneeberger is 3503 Wild Cherry Drive, Building 9, Austin, TX 78738. The address of Spearhead is 3828 Kennett Pike, Suite 202, Greenville, DE 19807.

PLAN OF DISTRIBUTION

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

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

- 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;
- through broker-dealers that 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 pledgees, transferees 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 donees, 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 create 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 Pre-Funded Warrants by payment of cash, however, we will receive the exercise price of the Pre-Funded Warrants.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, 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 the 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 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 Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

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

We have agreed with the selling stockholders to use reasonable best 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 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 shares of common stock being offered by this prospectus will be passed upon for us by Cooley LLP, Reston, Virginia. As of the date of this prospectus, GC&H Investments, LLC, an entity comprising partners and associates of Cooley LLP, beneficially owns 4,382 shares of our common stock.

EXPERTS

The consolidated financial statements of MapLight Therapeutics, Inc. and its subsidiary as of December 31, 2025 and 2024 and for the years then ended, incorporated in the prospectus by reference from the MapLight Therapeutics, Inc. Annual Report on Form 10-K for the year ended December 31, 2025, have been audited by RSM US LLP, an independent registered public accounting firm, as stated in their report thereon, incorporated herein by reference, and have been incorporated in this prospectus and registration statement in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL 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 common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers, such as us, that file electronically with the SEC. We also maintain a website at www.maplightrx.com, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not incorporated by reference in, and is not part of, this prospectus. We have included our website address as an inactive textual reference only.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that 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 that we file later with the SEC will automatically update and supersede this information. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus.

We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (File No. 001-42914):

- our Annual Report on Form 10-K for the year ended December 31, 2025, filed with the SEC on March 26, 2026;
- the information specifically incorporated by reference into our Annual Report on Form 10-K from our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 29, 2026;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2026, June 30, 2026, and September 30, 2026, filed with the SEC on May 14, 2026, August 13, 2026 and November 16, 2026, respectively;
- our Current Reports on Form 8-K filed with the SEC on April 29, 2026, June 18, 2026, June 22, 2026, June 24, 2026, July 27, 2026, and August 13, 2026; and
- the description of our common stock contained in our registration statement on Form 8-A, filed with the SEC on October 24, 2025, as updated by Exhibit 4.2 of our Annual Report on Form 10-K for the year ended December 31, 2025, filed with the SEC on March 26, 2026, including any amendments or reports filed for the purpose of updating such description.

In addition, all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial registration statement of which this prospectus is a part and prior to the effectiveness of such registration statement and all documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering (excluding any information furnished rather than filed) shall be deemed to be incorporated by reference into this prospectus.

Notwithstanding the statements in the preceding paragraphs, no document, report or exhibit (or portion of any of the foregoing) or any other information that we have "furnished" to the SEC pursuant to the Exchange Act shall be incorporated by reference into this prospectus.

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus, including exhibits to these documents. You should direct any requests for documents to MapLight Therapeutics, Inc., Attn: Corporate Secretary, 800 Chesapeake Drive, Redwood City, California 94063, telephone (617) 984-6300. You also may access these filings on our website at www.maplightrx.com. We do not incorporate the information on our website into this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus).

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.

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13,160,261 Shares



MapLight Therapeutics, Inc.

Common Stock

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 payable by us in connection with the sale of the securities being registered. All amounts are estimated except the U.S. Securities and Exchange Commission, or SEC, registration fee.

	Amount
SEC registration fee	$ 24,046*
Legal fees and expenses	150,000
Accounting fees and expenses	52,250
Miscellaneous fees and expenses	73,704
Total	$300,000

* A registration fee of $24,046 was previously paid with respect to the Registration Statement (No. 333-298837) relating to the securities that were included in such Registration Statement and that are included in this Post-Effective Amendment. Accordingly, there is no registration fee due in connection with the registration of such securities hereby.

Item 15. Indemnification of Directors and Officers.

We are incorporated under the laws of the State of Delaware. Section 102(b)(7) of the Delaware General Corporation Law, or DGCL, permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payments of dividends or unlawful stock repurchases, redemptions, or other distributions or (iv) for any transaction from which the director derived an improper personal benefit.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, 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 other adjudicating court determines that, despite the adjudication of liability but in view of all of 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.

As permitted by the DGCL, our amended and restated certificate of incorporation and amended and restated bylaws provide that: (i) we are required to indemnify our directors to the fullest extent permitted by the DGCL; (ii) we may, in our discretion, indemnify our officers, employees and other agents as set forth in the DGCL; (iii) we are required, upon satisfaction of certain conditions, to advance all expenses incurred by our directors in connection with certain legal proceedings; (iv) the rights conferred in the bylaws are not exclusive; and (v) we are authorized to enter into indemnification agreements with our directors, officers, employees and agents.

We have entered into indemnification agreements with each of our directors and executive officers that require us to indemnify them against expenses, judgments, fines, settlements and other amounts that any such person becomes legally obligated to pay (including with respect to a derivative action) in connection with any proceeding, whether actual or threatened, to which such person may be made a party by reason of the fact that such person is or was a director or officer of us or any of our affiliates, provided such person acted in good faith and in a manner such person reasonably believed to be in, or not opposed to, our best interests. The indemnification agreements also set forth certain procedures that will apply in the event of a claim for indemnification thereunder. At present, no litigation or proceeding is pending that involves any of our directors or officers regarding which indemnification is sought, nor are we aware of any threatened litigation that may result in claims for indemnification.

We maintain a directors' and officers' liability insurance policy. The policy insures directors and officers against unindemnified losses arising from certain wrongful acts in their capacities as directors and officers and reimburses us for those losses for which we have lawfully indemnified the directors and officers. The policy contains various exclusions.

In addition, the Registration Rights Agreement filed as Exhibit 4.5 to this registration statement provides for indemnification by the investors, severally and not jointly, of us, each of our directors, each of our officers who have signed this registration statement, and each person who controls us within the meaning of the Securities Act of 1933, as amended, or the Securities Act, or the Securities Exchange Act of 1934, as amended, or the Exchange Act, for certain liabilities based upon (i) any untrue statement or alleged untrue statement or omission or alleged omission of any material fact contained in this registration statement, or any prospectus, amendment or supplement relating thereto, or (ii) any violation or alleged violation by us or any of our subsidiaries of the Securities Act, the Exchange Act, or any other state securities or other "blue sky" laws of any jurisdiction in which the securities registered hereunder are offered and relating to action or inaction required of us in connection with such registration, in each case only to the extent such liabilities result from information about an investor furnished in writing by such investor for use in connection with the preparation of this registration statement or such prospectus, amendment or supplement relating thereto, subject to certain limits.

Item 16. Exhibits.

Exhibit No.	Description	Form	File No.	Exhibit	Filing Date	Filed Herewith
4.1	Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-42914	3.1	10/29/2025	
4.2	Amended and Restated Bylaws of the Registrant	8-K	001-42914	3.2	10/29/2025	
4.3	Form of Pre-Funded Warrant	8-K	001-42914	4.1	8/13/2026	
4.4#	Form of Securities Purchase Agreement, dated August 13, 2026, by and among the Registrant and the Purchasers	8-K	001-42914	10.1	8/13/2026	
4.5#	Form of Registration Rights Agreement, dated August 13, 2026, by and among the Registrant and the Purchasers	8-K	001-42914	10.2	8/13/2026	
5.1	Opinion of Cooley LLP	S-1	333-298837	5.1	9/9/2026	
23.1	Consent of RSM US LLP, independent registered public accounting firm					X
23.2	Consent of Cooley LLP (included in Exhibit 5.1)	S-1	333-298837	23.2	9/9/2026	

Exhibit No.	Description	Form	File No.	Exhibit	Filing Date	Filed Herewith
24.1	Powers of Attorney (included on the signature page).	S-1	333-298837	24.1	9/9/2026	
107	Filing Fee Table	S-1	333-298837	107	9/9/2026	

Pursuant to Item 601(a)(5) of Regulation S-K promulgated by the SEC, certain exhibits and schedules to this agreement have been omitted. The registrant will furnish supplementally to the SEC, upon its request, any or all of such omitted exhibits or schedules.

Item 17. Undertakings.

(a) 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;

(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 SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Filing Fee" table in the effective registration statement; and

(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 paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) 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 SEC by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, 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 to any purchaser:

(i) 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

(ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) (§ 230.424(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 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.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) 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.

(c) Insofar as indemnification for liabilities arising under the Securities Act 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 SEC 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 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act, 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 Post-Effective Amendment No. 1 to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Redwood City, State of California, on the 16th day of November, 2026.

MAPLIGHT THERAPEUTICS, INC.

By: /s/ Christopher A. Kroeger, M.D.
Christopher A. Kroeger, M.D.
Chief Executive Officer

Pursuant to the requirements of the Securities Act, this Post-Effective Amendment No. 1 to the Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Christopher A. Kroeger, M.D. Christopher A. Kroeger, M.D.	Chief Executive Officer and Director *(Principal Executive Officer)*	November 16, 2026
/s/ Jonathan Gillis Jonathan Gillis	Interim Chief Financial Officer and Chief Administrative and Accounting Officer *(Principal Financial Officer and Principal Accounting Officer)*	November 16, 2026
* George Pavlov	Chair of the Board of Directors	November 16, 2026
* Martin Babler	Director	November 16, 2026
* Troy Cox	Director	November 16, 2026
* Timothy Garnett, M.B.B.S.	Director	November 16, 2026
* Nanna Lüneborg, Ph.D.	Director	November 16, 2026
* Maria Walker	Director	November 16, 2026

* /s/ Christopher A. Kroeger, M.D.
By: Christopher A. Kroeger, M.D.
Attorney-in-fact

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Post-Effective Amendment No. 1 to the Form S-1 Registration Statement (No. 333-298837) on Form S-3 and related prospectus of MapLight Therapeutics, Inc. of our report dated March 26, 2026, relating to the consolidated financial statements of MapLight Therapeutics, Inc. and its subsidiary, appearing in the Annual Report on Form 10-K of MapLight Therapeutics, Inc. for the year ended December 31, 2025.

We also consent to the reference to our firm under the heading “Experts” in such prospectus.

/s/ RSM US LLP

Boston, Massachusetts
November 16, 2026