As filed with the Securities and Exchange Commission on January 31, 2024

Registration No. 333-

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

FORM S-3

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Olema Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**30-0409740**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

Olema Pharmaceuticals, Inc.
780 Brannan Street
San Francisco, California 94103
(415) 651-3316
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Sean Bohen, M.D., Ph.D.
Chief Executive Officer and President
780 Brannan Street
San Francisco, California 94103
(415) 651-3316
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Jodie Bourdet	**Shane Kovacs**
Julia R. Boesch	**Chief Operating and Financial Officer**
Cooley LLP	**780 Brannan Street**
3 Embarcadero Center, 20th Floor	**San Francisco, California 94103**
San Francisco, California 94111	**(415) 651-3316**
(415) 693-2000	

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 or until the 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 filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities, and it is not soliciting offers to buy these securities in any state where such offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JANUARY 31, 2024

PROSPECTUS

13,211,381 Shares of Common Stock

This prospectus relates to the resale from time to time of up to 13,211,381 shares of our common stock held by the selling stockholders identified in this prospectus, which were issued by us in a private placement on September 12, 2023. We are not selling any shares of common stock under this prospectus and we will not receive any proceeds from the sale by the selling stockholders of the shares offered by this prospectus.

Sales of the shares by the selling stockholders may occur at fixed prices, at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices. The selling stockholders may sell shares to or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the selling stockholders, the purchasers of the shares, or both.

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

Our common stock is traded on the Nasdaq Global Select Market under the symbol "OLMA." On January 30, 2024, the last reported sales price of our common stock was $12.05 per share.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" on page 4 of this prospectus as well as those contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is , 2024.

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ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, using a "shelf" registration process. Under this registration statement, the selling stockholders may sell from time to time in one or more offerings the common stock described in this prospectus.

Neither we nor the selling stockholders have authorized anyone to provide you with information other than the information provided or incorporated by reference in this prospectus. We and the selling stockholders take no responsibility for, and can provide no assurances as to the reliability of, any other information that others may give you. This prospectus may be used only in jurisdictions where offers and sales of these securities are permitted. You should assume that the information appearing in this prospectus is accurate only as of the date of this prospectus and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, or any sale of our common stock. Our business, financial condition and results of operations may have changed since those dates.

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 More Information."

In this prospectus, references to "Olema Pharmaceuticals," "Olema Oncology," "Olema," the "Company," the "registrant," "we," "us," and "our" refer to Olema Pharmaceuticals, Inc. The phrase "this prospectus" refers to this prospectus and any applicable prospectus supplement unless the context requires otherwise.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any applicable prospectus supplement and the documents incorporated by reference herein and therein, and any free writing prospectus that we have authorized for use in connection with this offering, contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the Private Securities Litigation Reform Act of 1995. For all forward-looking statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. The forward-looking statements include, but are not limited to, statements about:

- our financial performance;
- the sufficiency of our existing cash to fund our future operating expenses and capital expenditure requirements;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements, and needs for additional financing;
- the scope, progress, results and costs of developing palazestrant (OP-1250), OP-3136 or any other product candidates we may develop, and conducting nonclinical studies and clinical trials, including our palazestrant Phase 1/2 clinical studies and Phase 3 clinical trials;
- the timing and costs involved in obtaining and maintaining regulatory approval of palazestrant, OP-3136 or any other product candidates we may develop, and the timing or likelihood of regulatory filings and approvals, including our expectation to seek special designations for our product candidates for various diseases;
- our plans relating to commercializing palazestrant, OP-3136 and any other product candidates we may develop, if approved, including the geographic areas of focus and our ability to grow a sales team;
- the implementation of our strategic plans for our business and palazestrant, OP-3136 or any other product candidates we may develop;
- the size of the market opportunity for palazestrant, OP-3136 or any other product candidates we may develop in each of the diseases we target;
- our reliance on third parties to conduct nonclinical research activities, and for the manufacture of palazestrant, OP-3136 and any other product candidates we may develop;
- the beneficial characteristics, safety, efficacy and therapeutic effects of palazestrant, OP-3136 and any other product candidates we may develop;
- our estimates of the number of patients in the United States who suffer from the diseases we target and the number of subjects that will enroll in our clinical trials;
- the progress and focus of our current and future clinical trials, and the reporting of data from those trials;
- our ability to advance product candidates into and successfully complete clinical trials;
- the ability of our clinical trials to demonstrate the safety and efficacy of palazestrant, OP-3136 and any other product candidates we may develop, and other positive results;
- the success of competing therapies that are or may become available;
- developments relating to our competitors and our industry, including competing product candidates and therapies;
- our plans relating to the further development and manufacturing of palazestrant, OP-3136 and any other product candidates we may develop, including additional indications that we may pursue;
- existing regulations and regulatory developments in the United States and other jurisdictions;
- our potential and ability to successfully manufacture and supply palazestrant, OP-3136 and any other product candidates we may develop for clinical trials and for commercial use, if approved;

- the rate and degree of market acceptance of palazestrant, OP-3136 and any other product candidates we may develop, as well as the pricing and reimbursement of palazestrant, OP-3136 and any other product candidates we may develop, if approved;
- our continued reliance on third parties to conduct additional clinical trials of palazestrant, OP-3136 and any other product candidates we may develop, and for the manufacture of our product candidates;
- our plans and ability to obtain and protect intellectual property rights;
- the scope of protection we are able to establish and maintain for intellectual property rights, including palazestrant, OP-3136 and any other product candidates we may develop;
- the potential beneficial characteristics of OP-3136;
- our ability to access capital resources on favorable terms, or at all; and
- our ability to retain the continued service of our key personnel and to identify, hire, and then retain additional qualified personnel.

All statements other than statements of historical facts contained in this prospectus, any applicable prospectus supplement, and the documents incorporated by reference herein are forward-looking statements. These 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. This prospectus, any applicable prospectus supplement and the documents incorporated by reference herein or therein also contain estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus, any applicable prospectus supplement and the documents incorporated by reference herein are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus or the date of the information incorporated by reference in this prospectus, as applicable, and are subject to a number of risks, uncertainties and assumptions, including those under the heading “Risk Factors” in this prospectus and in the documents incorporated by reference herein, and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we undertake no obligation to publicly update or revise any forward-looking statements contained in this prospectus, any applicable prospectus supplement or the documents incorporated by reference herein, whether as a result of any new information, future events, changed circumstances or otherwise.

PROSPECTUS SUMMARY

This summary highlights important features of this offering and the information included or incorporated by reference in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should carefully read this prospectus, any applicable prospectus supplement and the information incorporated by reference in this prospectus and any applicable prospectus supplement before you invest in our common stock.

Company Overview

We are a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of next generation targeted therapies for women's cancers. Our team has spent the past decade characterizing the structure and function of the estrogen receptor, or ER, a key driver of breast cancer in approximately 75% of patients, in order to develop more potent, oral therapies that completely inactivate this signaling pathway. Our lead product candidate, palazestrant (OP-1250), is a novel oral therapy with combined activity as both a complete ER antagonist, or CERAN, and a selective ER degrader, or SERD, which we believe will drive deeper, more durable responses than existing therapies. Palazestrant, both as a monotherapy and in combination with inhibitors of cyclin-dependent kinase 4 and 6, or CDK4/6, demonstrated robust anti-tumor activity in a range of preclinical xenograft models of breast cancer, including in ESR1 and PIK3CA mutations and central nervous system, or CNS, metastasis.

In August 2020, we initiated an ongoing Phase 1/2 monotherapy dose escalation and expansion study evaluating palazestrant for the treatment of recurrent, locally advanced or metastatic ER-positive, or ER+, human epidermal growth factor receptor 2-negative, or HER2-, breast cancer. We reported initial data from the Phase 1a dose escalation portion of this study in November 2021, which provided proof-of-concept for palazestrant as a monotherapy treatment for ER+/HER2- breast cancer. We reported additional monotherapy data from the Phase 1b dose expansion portion of this study in October 2022. In October 2023, at the European Society for Medical Oncology, or ESMO, Congress 2023, we presented positive Phase 2 clinical data for palazestrant as a monotherapy which showed that palazestrant once-daily oral therapy was well-tolerated and demonstrated compelling progression-free survival in a heavily pretreated patient population. Based on these Phase 2 clinical results, we have initiated a global Phase 3 monotherapy clinical trial, called OPERA-01, testing palazestrant versus physician's choice standard of care in second- or third-line metastatic breast cancer patients.

In 2022, we also initiated Phase 1b/2 dose escalation and expansion studies evaluating palazestrant in combination with CDK4/6 inhibitors palbociclib and ribociclib and phosphatidylinositol 3 kinase alpha, or PI3Kα inhibitor, alpelisib. In December 2022, we reported initial data from the Phase 1a dose escalation portion of the study in combination with palbociclib which demonstrated attractive combinability including no drug-drug interaction, or DDI, between the two agents. In May 2023, we presented additional interim data from the combination study which continued to demonstrate combinability, with no DDI between palbociclib and palazestrant. Exposure of palbociclib and palazestrant combined was consistent with observed monotherapy exposure levels. In December 2023, we presented updated results from the Phase 2 dose expansion portion of the palazestrant-palbociclib combination clinical study and from the Phase 1b dose escalation portion of the palazestrant-ribociclib combination clinical study at the 2023 San Antonio Breast Cancer Symposium, or SABCS. The data presented at SABCS showed that palazestrant in combination with ribociclib and palbociclib demonstrated no significant DDIs, no dose-limiting toxicities and a tolerability profile consistent with the U.S. Food and Drug Administration, or FDA, approved labels of ribociclib or palbociclib plus an endocrine therapy.

In July 2022, we were granted Fast Track designation from the FDA for palazestrant for patients with ER+/HER2-metastatic breast cancer that has progressed following one or more lines of endocrine therapy with at least one line given in combination with a CDK4/6 inhibitor. In October 2023, we announced the expansion of our clinical collaboration with Novartis Institutes for BioMedical Research, Inc., increasing the size of the ongoing Phase 1/2 clinical study testing palazestrant in combination with ribociclib to approximately 60 patients. Also in October 2023, we announced a new pipeline program, reporting new preclinical data for novel compounds targeting KAT6, an epigenetic target that is dysregulated in breast and other cancers, that demonstrated potent anti-tumor activity. We are developing this program in collaboration with Aurigene Oncology. We anticipate filing an Investigational New Drug application with the FDA in late 2024.

Based on the clinical results we have achieved to date, we are advancing palazestrant through to late-stage clinical development both as a monotherapy and in combination with other targeted agents. We own worldwide development and commercialization rights to palazestrant. We believe palazestrant's oral formulation and dual mechanism of action directly address the limitations of current endocrine therapies, such as fulvestrant, aromatase inhibitors and tamoxifen, and position palazestrant as a potential endocrine therapy of choice for the treatment of ER+ breast cancers. Our goal is to transform the standard of care for women living with cancers by developing more effective therapies that apply our deep understanding and collective expertise in endocrine-driven cancers, nuclear receptor activities and mechanisms of acquired resistance.

Private Placement

On September 5, 2023, we entered into a Stock Purchase Agreement, or the Purchase Agreement, with the selling stockholders named in this prospectus, pursuant to which we issued and sold 13,211,381 shares of our common stock to the selling stockholders on September 12, 2023 at a purchase price of $9.84 per share of common stock, in a private placement, or the Private Placement. The total purchase price paid by the selling stockholders at the closing, before deducting offering expenses, was approximately $130.0 million.

The shares of common stock issued to the selling stockholders in connection with the Private Placement were not initially registered under the Securities Act or any state securities laws. We relied on the exemption from the registration requirements for transactions by an issuer not involving any public offering under Rule 506 under Regulation D of the Securities Act and in reliance on similar exemptions under applicable state laws. In connection with their execution of the Purchase Agreement, each of the selling stockholders represented to us that such selling stockholder is an "accredited investor" within the meaning of Rule 501 of Regulation D of the Securities Act or a Qualified Institutional Buyer within the meaning of Rule 144A under the Securities Act and that the securities purchased by such selling stockholder were being acquired for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof.

Under the terms of the Purchase Agreement, we agreed to prepare and file, on or before January 31, 2024, a registration statement with the SEC to register for resale the shares of our common stock issued under the Purchase Agreement, and to use commercially reasonable efforts to cause such registration statement to be declared effective within a specified time period set forth in the Purchase Agreement, and keep such registration statement effective for up to two years.

Corporate Information

We were initially incorporated in Delaware in August 2006 under the name CombiThera, Inc., and we commenced operations in March 2007. In March 2009, we changed our name to Olema Pharmaceuticals, Inc. Our principal executive offices are located at 780 Brannan Street, San Francisco, California 94103, and our telephone number is (415) 651-3316. Our website address is www.olema.com. Information contained in, or accessible through, our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is only an inactive textual reference.

The Offering

Common stock offered by the selling stockholders	13,211,381 shares of common stock.
Terms of the offering	Each selling stockholder will determine when and how it will sell the common stock offered in this prospectus, as described in "Plan of Distribution."
Use of proceeds	We will not receive any proceeds from the sale of the shares of common stock covered by this prospectus.

Risk factors	See "Risk Factors" beginning on page 4, for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Nasdaq Global Select Market symbol	OLMA

The selling stockholders named in this prospectus may offer and sell up to 13,211,381 shares of our common stock. Our common stock is currently listed on the Nasdaq Global Select Market under the symbol "OLMA." Shares of our common stock that may be offered under this prospectus will be fully paid and non-assessable. We will not receive any of the proceeds of sales by the selling stockholders of any of the common stock covered by this prospectus. Throughout this prospectus, when we refer to the shares of our common stock being registered on behalf of the selling stockholders for offer and resale, we are referring to the shares of common stock that have been issued to the selling stockholders in the Private Placement as described above. When we refer to the selling stockholders in this prospectus, we are referring to the selling stockholders identified in this prospectus and, as applicable, 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.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully review the risks and uncertainties described under the heading "Risk Factors" in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q, as filed with the SEC, which are incorporated by reference into this prospectus, as well as in any applicable prospectus supplement, and under similar headings in the other documents that are incorporated by reference into this prospectus and any applicable prospectus supplement, before deciding whether to purchase the common stock being registered pursuant to the registration statement of which this prospectus is a part. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our common stock, and the occurrence of any of these risks might cause you to lose all or part of your investment. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations. Please also read carefully the section above titled "Special Note Regarding Forward-Looking Statements."

USE OF PROCEEDS

We will not receive any of the proceeds from the sale or other disposition of shares of our common stock held by the selling stockholders pursuant to this prospectus.

We will bear certain out-of-pocket costs, expenses and fees incurred in connection with the registration of shares of our common stock to be sold by the selling stockholders pursuant to this prospectus. Other than registration expenses, the selling stockholders will bear underwriting discounts, commissions, placement agent fees or other similar expenses payable with respect to sales of shares of our common stock.

SELLING STOCKHOLDERS

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

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our common stock. Generally, a person "beneficially owns" shares of our 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.

The information in the table below and the footnotes thereto regarding shares of common stock to be beneficially owned after the offering assumes the sale of all shares being offered by the selling stockholders under this prospectus. The percentage of shares owned prior to and after the offering is based on 55,097,118 shares of common stock outstanding as of December 31, 2023. This information has been obtained from the selling stockholders or in Schedules 13G or 13D and other public documents filed with the SEC. Unless otherwise indicated, the address for the persons and entities listed in the table below is c/o Olema Pharmaceuticals, Inc., 780 Brannan Street, San Francisco, California 94103.

	Before Offering			After Offering	
Name and Address	**Number of Shares Beneficially Owned**	**Percentage of Shares Beneficially Owned**	**Number of Shares Offered(1)**	**Number of Shares Beneficially Owned**	**Percentage of Shares Beneficially Owned**
Cormorant Global Healthcare Master Fund, LP (2) 200 Clarendon Street, 52nd Floor Boston, MA 02116	2,181,800	4.0 %	1,422,764	759,036	1.4 %
Deep Track Biotechnology Master Fund, Ltd.(3) 200 Greenwich Avenue, 3rd Floor Greenwich, CT 06830	1,930,894	3.5 %	1,930,894	-	*
Logos Global Master Fund LP (4) c/o Logos Global Management LP 1 Letterman Drive, Bldg. C, Ste. C3-350 San Francisco, CA 94129	1,800,000	3.3 %	508,130	1,291,870	2.3 %
Vivo Opportunity Fund Holdings, L.P. (5) c/o Vivo Capital LLC 192 Lytton Avenue Palo Alto, CA 94301	1,873,704	3.4 %	1,422,764	450,940	*

Name and Address	Before Offering: Number of Shares Beneficially Owned	Before Offering: Percentage of Shares Beneficially Owned	Number of Shares Offered(1)	After Offering: Number of Shares Beneficially Owned	After Offering: Percentage of Shares Beneficially Owned
Woodline Master Fund LP (6) 4 Embarcadero Center, Suite 3450 San Francisco, CA 94115	613,654	1.1%	406,504	207,150	*
Entities affiliated with BVF Partners L.P. (7) 44 Montgomery St., 40th Floor San Francisco, CA 94104	9,036,337	16.4%	1,524,390	7,511,947	13.6%
Paradigm BioCapital International Fund Ltd. (8) 767 Third Avenue, 17th Floor New York, NY 10017	6,590,981	12.0%	3,505,738	3,085,243	5.6%
Paradigm BioCapital Advisors LP (9) 767 Third Avenue, 17th Floor New York, NY 10017	1,312,619	2.4%	559,303	753,316	1.4%
Lightspeed Venture Partners Select V, L.P. (10) 2200 Sand Hill Road Menlo Park, CA 94025	1,930,894	3.5%	1,930,894	-	*

* Represents beneficial ownership of less than 1%.

(1) For purposes of this table, we have assumed that, after completion of the offering, none of the shares covered by this prospectus will be held by the selling stockholders.

(2) Consists of (i) 759,036 shares of common stock held prior to the Private Placement by Cormorant Global Healthcare Master Fund, LP, or Cormorant Master Fund, and (ii) 1,422,764 shares of common stock purchased in the Private Placement by Cormorant Master Fund. Cormorant Global Healthcare GP, LLC, or Cormorant GP, serves as the general partner of Cormorant Master Fund. Cormorant Asset Management, LP, or Cormorant Asset Management, serves as the investment manager to Cormorant Master Fund. Bihua Chen serves as the managing member of Cormorant GP and the general partner of Cormorant Asset Management. Each of Bihua Chen, Cormorant Master Fund, Cormorant GP, and Cormorant Asset Management may be deemed to have voting and investment power over the shares held by Cormorant Master Fund.

(3) Consists of 1,930,894 shares of common stock purchased in the Private Placement by Deep Track Biotechnology Master Fund, Ltd., or Deep Track Biotech. Deep Track Capital, LP, or Deep Track Capital, and David Kroin have shared voting power and shared dispositive power of the shares held by Deep Track Biotech. Mr. Kroin may be considered a control person for Deep Track Capital.

(4) Consists of (i) 1,291,870 shares of common stock held unrelated to the Private Placement by Logos Global Master Fund LP, or Logos Global Fund, and (ii) 508,130 shares of common stock purchased in the Private Placement by Logos Global Fund. Graham Walmsley is on the Company's Board of Directors, or the Board. Arsani William and Graham Walmsley are general partners of Logos Global Fund and as a result share power to direct the voting and disposition of these securities and may be deemed to beneficially own these securities.

(5) Consists of (i) 450,940 shares of common stock held prior to the Private Placement by Vivo Opportunity Fund Holdings, L.P., or Vivo Fund Holdings, and (ii) 1,422,764 shares of common stock purchased in the Private Placement by Vivo Fund Holdings. Vivo Opportunity, LLC, or Vivo Opportunity, is the general partner of Vivo Fund Holdings. The voting members of Vivo Opportunity are Hongbo Lu, Kevin Dai, Frank Kung, and Michael Chang, none of whom has individual voting or investment power with respect to these shares and each of whom disclaims beneficial ownership of such shares.

(6) Consists of (i) 207,150 shares of common stock held prior to the Private Placement by Woodline Master Fund LP, or Woodline Master Fund, and (ii) 406,504 shares of common stock purchased in the Private Placement by Woodline Master Fund. Woodline Partners LP serves as the investment manager of Woodline Master Fund and may be deemed to be the beneficial owner of such shares. Woodline Partners LP disclaims any beneficial ownership of these shares.

(7) Consists of (a) (i) 3,913,676 shares of common stock held prior to the Private Placement by Biotechnology Value Fund, L.P., or BVF LP, and (ii) 775,278 shares of common stock purchased in the Private Placement by BVF LP, (b) (i) 2,906,659 shares of common stock held prior to the Private Placement by Biotechnology Value Fund II, L.P., or BVF II, and (ii) 677,853 shares of common stock purchased in the Private Placement by BVF II, (c) (i) 471,350 shares of common stock held prior to the Private Placement by Biotechnology Value Trading Fund OS

LP, or BVF Trading Fund, and (ii) 52,801 shares of common stock purchased in the Private Placement by BVF Trading Fund, and (d) (i) 220,262 shares of common stock held prior to the Private Placement by MSI BVF SPV, LLC, or MSI and (ii) 18,458 shares of common stock purchased in the Private Placement by MSI. Gorjan Hrustanovic serves on the Board and is a managing director at BVF Partners L.P., or BVF Partners, the investment adviser of each of BVF LP, BVF II, BVF Trading Fund and MSI. Mark N. Lampert may be deemed to beneficially own such shares and has shared voting and dispositive power over the shares.

(8) Consists of (i) 3,085,243 shares of common stock held unrelated to the Private Placement by Paradigm BioCapital International Fund Ltd., or Paradigm Fund, and (ii) 3,505,738 shares of common stock purchased in the Private Placement by Paradigm Fund. The shares may be deemed to be indirectly beneficially owned by each of Paradigm BioCapital Advisors LP, or Paradigm Advisor, Paradigm BioCapital Advisors GP LLC, or Paradigm Advisor GP, and Senai Asefaw, M.D. The Paradigm Advisor GP is the general partner of Paradigm Advisor and Senai Asefaw, M.D. is the managing member of the Paradigm Advisor GP. The Paradigm Advisor is the investment manager of Paradigm Fund. The foregoing statements shall not be construed as an admission that any of the Paradigm Advisor, Paradigm Advisor GP and Senai Asefaw, M.D. is a beneficial owner of the shares.

(9) Consists of (i) 753,316 shares of common stock held prior to the Private Placement by Paradigm Advisor, as discretionary investment manager on behalf of a separate account client solely with respect to the assets for which Paradigm Advisor acts as its investment manager, and (ii) 559,303 shares purchased in the Private Placement by Paradigm Advisor, as discretionary investment manager on behalf of a separate account client solely with respect to the assets for which Paradigm Advisor acts as its investment manager. The shares may be deemed to be indirectly beneficially owned by each of Paradigm Advisor, Paradigm Advisor GP, and Senai Asefaw, M.D. The Paradigm Advisor GP is the general partner of Paradigm Advisor and Senai Asefaw, M.D. is the managing member of the Paradigm Advisor GP. The shares are managed by Paradigm Advisor, with full investment and voting discretion, on behalf of one or more separately managed accounts managed by Paradigm Advisor, or collectively, the Account. The foregoing statements shall not be construed as an admission that any of the Paradigm Advisor, the Paradigm Advisor GP, Senai Asefaw, M.D. and the Account is a beneficial owner of the shares.

(10) Consists of 1,930,894 shares of common stock purchased in the Private Placement by Lightspeed Venture Partners Select V, L.P. Arif Janmohamed, Ravi Mhatre, Bejul Somaia may each be deemed to beneficially own such shares and have shared voting and dispositive power over the shares, but each disclaims beneficial ownership except to the extent of their respective pecuniary interest therein, if any.

Relationship with Selling Stockholders

As discussed in greater detail above under the section "Prospectus Summary-Private Placement," on September 5, 2023, we entered into the Purchase Agreement with the selling stockholders pursuant to which we issued and sold shares of common stock and agreed with the selling stockholders to file a registration statement to enable the resale of the shares of common stock covered by this prospectus. Other than (1) Gorjan Hrustanovic, who is a member of our board of directors and Managing Director at BVF Partners, LP, (2) Graham Walmsley, who is a member of our board of directors and Managing Member at Logos Global Management, LP, (3) entities affiliated with BVF LP, BVF II, BVF Trading Fund, and MSI, which are a 5% stockholder, (4) entities affiliated with Logos Global Fund which are a 5% stockholder, (5) entities affiliated with Paradigm Fund and Paradigm Advisor which are a 5% stockholder, and (6) entities affiliated with Cormorant Master Fund which are a 5% stockholder, none of the selling stockholders or any persons having control over such selling stockholders has held any position or office with us or our affiliates within the last three years or has had a material relationship with us or any of our predecessors or affiliates within the past three years, other than as a result of the ownership of our shares or other securities.

PLAN OF DISTRIBUTION

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

Each selling stockholder, which may 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 its 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 privately negotiated prices.

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

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

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b) 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 pledgees, transferees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

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

stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into options or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to each 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 its agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

The selling stockholders also may resell all or a portion of the shares in open market transactions, rather than under this prospectus, in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be "underwriters" within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

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

If underwriters are used in the sale, the shares of common stock will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. In connection with any such underwritten sale of shares of common stock, underwriters may receive compensation from the selling stockholders, for whom they may act as agents, in the form of discounts, concessions or commissions. If the selling stockholders use an underwriter or underwriters to effectuate the sale of shares of common stock, we and/or they will execute an underwriting agreement with those underwriters at the time of sale of those shares of common stock. To the extent required by law, the names of the underwriters will be set forth in a prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes the prospectus supplement and the accompanying prospectus used by the underwriters to sell those securities. The obligations of the underwriters to purchase those shares of common stock will be subject to certain conditions precedent, and unless otherwise specified in a prospectus supplement, the underwriters will be obligated to purchase all the shares of common stock offered by such prospectus supplement if any of such shares of common stock are purchased. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

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. 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 are required to pay certain fees and expenses incurred by us incident to the registration of the shares of common stock of the selling stockholders. We have agreed to indemnify the selling stockholders against certain losses, claims, damages, liabilities or expenses, including liabilities under the Securities Act, and the selling stockholders may be entitled to contribution. We may be indemnified by the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus, or we may be entitled to contribution.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus forms a part effective until the earlier of (1) the second anniversary of the effective date of this registration statement, (2) the

date on which all of the shares have been sold pursuant to the registration statement, or (3) the date on which all of the shares may be sold without restriction pursuant to Rule 144 of the Securities Act.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, certain legal matters in connection with the offering and the validity of the securities offered by this prospectus, and any supplement thereto, will be passed upon by Cooley LLP, San Francisco, California.

EXPERTS

The consolidated financial statements of Olema Pharmaceutics, Inc. appearing in Olema Pharmaceuticals, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2022, 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 financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the report of Ernst & Young LLP pertaining to such financial statements given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus and any prospectus supplement are part of a registration statement we filed with the SEC and do 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 securities we are offering 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 selling stockholder, agent, underwriter or dealer has authorized any person to provide you with different information. The selling stockholders are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus 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 the securities 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 our company, Olema Pharmaceuticals, Inc. The address of the SEC website is www.sec.gov.

Copies of certain information filed by us with the SEC are also available on our website at www.olema.com. Information contained in or accessible through our website does not constitute a part of this prospectus and is not incorporated by reference into this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information 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 an important part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We also incorporate by reference into this prospectus the documents listed below and any future filings made by us with the SEC (other than Current Reports or portions thereof 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 and other portions of documents that are furnished, but not filed, pursuant to applicable rules promulgated by the SEC) 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 filing and concurrent effectiveness of the registration statement but prior to the termination of all offerings covered by this prospectus:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on March 9, 2023, or the 2022 Annual Report;

- the information specifically incorporated by reference into our 2022 Annual Report from our definitive proxy statement on Schedule 14A, filed with the SEC on April 28, 2023.

- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023 and September 30, 2023, filed with the SEC on May 9, 2023, August 8, 2023, and November 7, 2023, respectively.

- our current reports on Form 8-K (other than information furnished rather than filed) filed with the SEC on May 11, 2023, June 21, 2023, September 5, 2023, October 10, 2023, October 17, 2023, as subsequently amended on October 18, 2023, October 23, 2023, December 5, 2023, January 5, 2024 and January 8, 2024; and

- the description of our common stock in our registration statement on Form 8-A filed with the SEC on November 17, 2020, including any amendments or reports filed for the purpose of updating such description, including Exhibit 4.3 to our Annual Report on Form 10-K for the year ended December 31, 2020.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request, without charge to the requester, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents by writing us at 780 Brannan Street, San Francisco, California 94103, Attn: Secretary, or by telephoning us at (415) 651-3316.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the estimated costs and expenses to be incurred by us in connection with the issuance and registration of the securities under this registration statement, all of which will be borne by us. All the amounts shown are estimates, except for the SEC registration fee.

SEC Registration Fee	$	21,899
Legal Fees and Expenses	$	292,000
Accounting Fees and Expenses	$	10,000
Miscellaneous	$	5,000
Total	$	328,899

Item 15. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act. Our amended and restated certificate of incorporation provides for indemnification of our directors to the maximum extent permitted by the Delaware General Corporation Law, and our amended and restated bylaws provide for indemnification of our directors, officers, employees and other agents to the maximum extent permitted by law.

We have entered into indemnification agreements with our directors and officers, whereby we have agreed to indemnify our directors and officers to the fullest extent permitted by law, including advancement of expenses incurred in legal proceedings to which the director or officer was, or is threatened to be made, a party by reason of the fact that such director or officer is or was a director, officer, employee or agent of the Company, provided that such director or officer acted in good faith and in a manner that the director or officer reasonably believed to be in, or not opposed to, the best interest of the Company.

At present, there is no pending litigation or proceeding involving a director or officer of the Company regarding which indemnification is sought, nor is the registrant aware of any threatened litigation that may result in claims for indemnification.

We maintain insurance policies that indemnify our directors and officers against various liabilities arising under the Securities Act and the Exchange Act that might be incurred by any director or officer in his or her capacity as such.

Item 16. Exhibits

Exhibit Number	Description of Document
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-39712), filed with the SEC on November 23, 2020).
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-39712), filed with the SEC on December 16, 2022).
4.1	Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-249748), filed with the SEC on November 16, 2020).

Exhibit Number	Description of Document
4.2	Stock Purchase Agreement, dated September 5, 2023, by and among the Registrant and the Purchasers named therein (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-39712), filed with the SEC on September 5, 2023).
5.1	Opinion of Cooley LLP.
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm.
23.2	Consent of Cooley LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page).
107	Filing Fee Table.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(a) (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% change in the maximum aggregate offering price set forth in the "Calculation of Registration 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 the undertakings set forth in paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section 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 this registration statement or are 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, 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) 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 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 of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Francisco, California on January 31, 2024.

Olema Pharmaceuticals, Inc.

By: */s/ Sean Bohen*
Name: Sean Bohen, M.D., Ph.D.
Title: President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Sean Bohen, M.D., Ph.D. and Shane Kovacs, and each one of them, 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 their name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective on filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and all post-effective amendments thereto, 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 might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, 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, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Sean Bohen Sean Bohen, M.D., Ph.D.	President, Chief Executive Officer and Director *(Principal Executive Officer)*	January 31, 2024
/s/ Shane Kovacs Shane Kovacs	Chief Operating and Financial Officer *(Principal Financial Officer and Principal Accounting Officer)*	January 31, 2024
/s/ Ian Clark Ian Clark	Chairperson of the Board	January 31, 2024
/s/ Cynthia Butitta Cynthia Butitta	Director	January 31, 2024
/s/ Scott Garland Scott Garland	Director	January 31, 2024
/s/ Cyrus L. Harmon Cyrus L. Harmon, Ph.D.	Director	January 31, 2024

Signature	Title	Date
/s/ Sandra J. Horning Sandra J. Horning, M.D., FACP, FASCO	Director	January 31, 2024
/s/ Gorjan Hrustanovic Gorjan Hrustanovic, Ph.D.	Director	January 31, 2024
/s/ Yi Larson Yi Larson	Director	January 31, 2024
/s/ Andrew Rappaport Andrew Rappaport	Director	January 31, 2024
/s/ Graham Walmsley Graham Walmsley, M.D., Ph.D.	Director	January 31, 2024

Jodie M. Bourdet
T: +1 415 693 2054
jbourdet@cooley.com

January 31, 2024

Olema Pharmaceuticals, Inc.
780 Brannan Street
San Francisco, California 94103

Ladies and Gentlemen:

We have acted as counsel to Olema Pharmaceuticals, Inc., a Delaware corporation (the "***Company***"), in connection with the filing of a Registration Statement on Form S-3 (the "***Registration Statement***") by the Company with the Securities and Exchange Commission (the "***Commission***") under the Securities Act of 1933, as amended (the "***Securities Act***"), covering the resale by certain selling stockholders (the "***Selling Stockholders***") of 13,211,381 shares (the "***Shares***") of the Company's Common Stock, par value $0.0001 per share ("***Common Stock***"). The Shares were issued pursuant to a Stock Purchase Agreement, dated September 5, 2023, by and between the Company and the purchasers named therein (the "***Stock Purchase Agreement***").

In connection with this opinion, we have examined and relied upon the Registration Statement and related prospectus, the Company's certificate of incorporation and bylaws, each as currently in effect, the Stock Purchase Agreement and such other documents, records, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies, the accuracy, completeness and authenticity of certificates of public officials and the due authorization, execution and delivery of all documents by all persons other than the Company where authorization, execution and delivery are prerequisites to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares are validly issued, fully paid and nonassessable.

Our opinion is limited to the matters expressly set forth in this letter, and no opinion should be implied, or may be inferred, beyond the matters expressly stated. This opinion speaks only as to law and facts in effect or existing as of the date hereof, and we undertake no obligation or responsibility to update or supplement this letter to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

We hereby consent to the reference to our firm under the caption "Legal Matters" in the prospectus included in the Registration Statement and to the filing of this opinion as an exhibit to the Registration Statement. 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,

COOLEY LLP

By: /s/ Jodie Bourdet
Jodie Bourdet

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in this Registration Statement (Form S-3) and related Prospectus of Olema Pharmaceuticals, Inc. for the registration of 13,211,381 shares of its common stock and to the incorporation by reference therein of our report dated March 9, 2023, with respect to the consolidated financial statements of Olema Pharmaceuticals, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2022, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Iselin, New Jersey
January 31, 2024

Exhibit 107

Calculation of Filing Fee Tables

Form S-3
(Form Type)

Olema Pharmaceuticals, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered(1)	Proposed Maximum Offering Price Per Unit(2)	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Newly Registered Securities								
Fees to be Paid	Equity	Common Stock, par value $0.0001 per share	Other	13,211,381	$11.23	$148,363,808.63	0.00014760	$21,898.50
Fees Previously Paid	—	—	—	—	—	—	—	—
Carry Forward Securities								
Carry Forward Securities	—	—	—	—	—	—	—	—
	Total Offering Amounts			13,211,381	—	$148,363,808.63	—	$21,898.50
	Total Fees Previously Paid				—	—	—	—
	Total Fee Offsets				—	—	—	—
	Net Fee Due				—	—	—	$21,898.50

(1) This registration statement registers the resale of 13,211,381 outstanding shares of common stock of the Olema Pharmaceuticals, Inc. (the "***Registrant***") held by the selling stockholders identified in this registration statement. The shares of common stock may be offered for resale by the selling stockholders pursuant to the prospectus contained herein. Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "***Securities Act***"), this registration statement also covers any additional number of shares of common stock issuable upon stock splits, stock dividends, or other distribution, recapitalization or similar events with respect to the shares of common stock being registered pursuant to this registration statement.

(2) Estimated in accordance with Rule 457(c) under the Securities Act, solely for purposes of calculating the registration fee based on $11.23, which is the average of the high and low price per share of the Registrant's common stock as reported on The Nasdaq Global Select Market on January 29, 2024.