MATEON THERAPEUTICS INC

FORM S-1/A
(Securities Registration Statement)

Filed 08/02/17

Address	701 GATEWAY BLVD. SUITE 210 SOUTH SAN FRANCISCO, CA 94080
Telephone	650-635-7000
CIK	0000908259
Symbol	MATN
SIC Code	2836 - Biological Products, Except Diagnostic Substances
Industry	Biotechnology & Medical Research
Sector	Healthcare
Fiscal Year	12/31

As filed with the Securities and Exchange Commission on August 2, 2017

Registration No. 333-217904

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

Amendment No. 2
to
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

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

Delaware	2836	13-3679168
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

---

701 Gateway Blvd., Suite 210
South San Francisco, California 94080
(650) 635-7000
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

William Schwieterman, M.D.
Chief Executive Officer
Mateon Therapeutics, Inc.
701 Gateway Blvd., Suite 210
South San Francisco, California 94080
(650) 635-7000
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Megan N. Gates, Esq.	Charles Phillips, Esq.	Merav Gershtenman, Esq.
Mintz, Levin, Cohn, Ferris Glovsky and Popeo, P.C.	Ellenoff Grossman & Schole LLP	Senior Legal Counsel
One Financial Center	1435 Avenue of the Americas	H.C. Wainwright & Co., LLC
Boston, MA 02111	New York, NY 10105-0302	430 Park Avenue, 4th Floor
Telephone: (617) 542-6000	Telephone: (212) 370-1300	New York, NY 10022
Fax: (617) 542-2241	Fax: (212) 370-7888	Telephone: (212) 356-0500
		Fax: (212) 214-0803

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

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, 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, 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 post-effective amendment filed pursuant to Rule 462(d) 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. ☐

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. (Check one):

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	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 to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered (1)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common stock, $0.01 par value per share	$6,000,000	695.40
Common warrants to purchase shares of common stock and common stock issuable upon exercise thereof	$3,000,000	347.70
Pre-funded warrants to purchase shares of common stock and common stock issuable upon exercise thereof (3)	$6,000,000	—
Warrants issued to the placement agent and common stock issuable upon exercise thereof (4)	$300,000	34.77
Total	$9,300,000	$1,077.87(5)

(1) Pursuant to Rule 416, the securities registered also include such indeterminate amounts and numbers of shares of common stock issuable to cover additional securities that may be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.

(2) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457 under the Securities Act.

(3) The proposed maximum offering price of the common stock proposed to be sold in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any pre-funded warrants offered and sold in the offering, and as such the proposed aggregate maximum offering price of the common stock and pre-funded warrants (including the common stock issuable upon exercise of the pre-funded warrants), if any, is $6,000,000.

(4) Represents warrants to purchase a number of shares of common stock equal to 4% of the aggregate number of shares of common stock and pre-funded warrants sold in this offering at an exercise price equal to 125% of the offering price per share of the common stock and accompanying warrant placed pursuant to this offering. No additional registration fee is payable pursuant to Rule 457(g) under the Securities Act.

(5) $1,392 was previously paid.

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 Commission, acting pursuant to said Section 8(a), may determine.

Table of Contents

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is declared effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS **SUBJECT TO COMPLETION** **DATED AUGUST 2, 2017**

Mateon Therapeutics, Inc.

16,666,666 Shares of Common Stock
Pre-funded Warrants to Purchase Shares of Common Stock
Common Warrants to Purchase 8,333,333 Shares of Common Stock

We are offering up to 16,666,666 shares of our common stock and common warrants to purchase an aggregate of 8,333,333 shares of our common stock (and the shares of common stock that are issuable from time to time upon exercise of the common warrants). We are also offering to each purchaser whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if the purchaser so chooses, pre-funded warrants, in lieu of shares of common stock that would otherwise result in the purchaser's beneficial ownership exceeding 4.99% of our outstanding common stock (or at the election of the purchaser, 9.99%). Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant will equal the price per share at which the shares of common stock are being sold to the public in this offering, minus $0.01, and the exercise price of each pre-funded warrant will be $0.01 per share. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. Each share of common stock and pre-funded warrant is being sold together with a common warrant to purchase one half a share of our common stock, at an exercise price of $ per share. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. The common warrants will be exercisable immediately and will expire five years from the date of issuance. The shares of common stock and pre-funded warrants, and the accompanying common warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance.

Our common stock is traded on the OTCQX Marketplace under the symbol "MATN." The last reported sale price of our common stock on the OTCQX Marketplace on July 31, 2017 was $0.36 per share. The public offering price per share of common stock and any pre-funded warrant and accompanying common warrant will be determined between us and the placement agent based on market conditions at the time of pricing, and may be at a discount to the current market price. We do not intend to apply for listing of the warrants on any securities exchange or other nationally recognized trading system. There is no established public trading market for the pre-funded warrants or common warrants, and we do not expect a market to develop.

Investing in our securities involves risks. See " Risk Factors " beginning on page 7 of this prospectus for a discussion of factors you should consider before making an investment in our securities.

	Per Share and Accompanying Common Warrant	Per Pre-Funded Warrant and Accompanying Common Warrant	Total
Public offering price	$	$	$
Placement agent's fees	$	$	$
Offering proceeds to Mateon, before expenses	$	$	$

We have retained H.C. Wainwright & Co., LLC as our exclusive placement agent to use its reasonable best efforts to solicit offers to purchase the securities in this offering. The placement agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. Because there is no minimum offering amount required as a condition to closing in this offering, the actual public offering amount, placement agent's fees, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth above.

We have agreed to pay the placement agent a total cash fee equal to 6.5% of the gross proceeds of this offering (which may be reduced under certain circumstances). In addition to the placement agent's fees, we have agreed to pay the placement agent a non-accountable expense allowance of $25,000, to reimburse the placement agent for fees and expenses of its legal counsel in an amount up to $100,000 and to reimburse the placement agent for any escrow or settlement fees in an amount not to exceed $10,000. As additional compensation, we plan to issue the placement agent warrants to purchase a number of shares of common stock equal to 4% of the number of shares of common stock and pre-funded warrants placed in this offering to investors which percentage shall be reduced in certain circumstances. The exercise price for these warrants will be $ per share, which represents 125% of the purchase price. See "Plan of Distribution."

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.

We expect to deliver the securities to investors on or about , 2017.

Rodman & Renshaw
a unit of H.C. Wainwright & Co.

The date of this prospectus is , 2017.

TABLE OF CONTENTS

About This Prospectus

You should rely only on information contained in this prospectus. We have not, and the placement agent has not, authorized anyone to provide you with additional information or information different from that contained in this prospectus. We are not making an offer of these securities in any state or other jurisdiction where the offer is not permitted. The information in this prospectus may only be accurate as of the date on the front of this prospectus regardless of time of delivery of this prospectus or any sale of our securities.

No person is authorized in connection with this prospectus to give any information or to make any representations about us, our common stock or any matter discussed in this prospectus, other than the information and representations contained in this prospectus. If any other information or representation is given or made, such information or representation may not be relied upon as having been authorized by us. This prospectus does not constitute an offer to sell, or a solicitation of an offer to buy our common stock in any circumstance under which the offer or solicitation is unlawful. Neither the delivery of this prospectus nor any distribution of our common stock in accordance with this prospectus shall, under any circumstances, imply that there has been no change in our affairs since the date of this prospectus.

Neither we nor the placement agent have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. You are required to inform yourself about, and to observe any restrictions relating to, this offering and the distribution of this prospectus.

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

As used in this prospectus, unless the context indicates or otherwise requires, “the Company,” “our Company,” “Mateon,” “we,” “us,” and “our” refer to Mateon Therapeutics, Inc., a Delaware corporation.

Registered Trademarks and Trademark Applications : “OXi4503” is the subject of a trademark registration in the United States. Other brands, names and trademarks contained in this prospectus are the property of their respective owners. Solely for convenience, the trademarks, service marks and trade names referred to in this prospectus may appear without the ® and TM symbols, but such references are not intended to indicate, in any way, that the owner thereof will not assert, to the fullest extent under applicable law, such owner’s rights to these trademarks, service marks and trade names. This prospectus contains additional trade names, trademarks and service marks of other companies, which, to our knowledge, are the property of their respective owners.

We obtained industry and market data used throughout and incorporated by reference into this prospectus through our research, surveys and studies conducted by third parties and industry and general publications. We have not independently verified market and industry data from third-party sources.

PROSPECTUS SUMMARY

The following is only a summary. We urge you to read the entire prospectus, including the more detailed consolidated financial statements, notes to the consolidated financial statements and other information included herein or incorporated by reference from our other filings with the U.S. Securities and Exchange Commission, or SEC. Investing in our securities involves risks. Therefore, please carefully consider the information provided under the heading "Risk Factors" starting on page 7.

MATEON THERAPEUTICS, INC.

Overview

We are a clinical stage biopharmaceutical company developing small molecule injectable drugs for the treatment of cancer. Our investigational drugs selectively disrupt the blood vessels that supply cancer tumors, resulting in rapid and extensive tumor cell death. Our goal is to advance multiple vascular disrupting agents, or VDAs, into late stage pivotal clinical trials and seek FDA approval or sell the marketing rights to a larger pharmaceutical company.

Our lead VDA candidate, CA4P, is currently in late-stage development for patients with platinum-resistant ovarian cancer (prOC). CA4P has been observed to be a potent and highly selective vascular disrupting agent which has been tested in nearly 500 patients with various cancers. In the United States, prOC affects over 3,000 patients, and we estimate the annual sales potential for a new drug to treat prOC to be approximately $500 million.

We believe CA4P offers the following clinical and product benefits:

- **Improved outcomes** : In a previous clinical trial in recurrent ovarian cancer, CA4P had a clinically meaningful and statistically significant improvement in progression free survival (PFS) over the use of an anti-angiogenic alone;
- **Safety** : CA4P has a well characterized safety profile, with no major toxicities observed to date. The most common adverse event is a transient post-infusion blood pressure increase which is generally predictable and manageable;
- **Combination with standard of care** : In our trials, we are adding CA4P to the standard of care in recurrent ovarian cancer, rather than competing against it like many other trials in this area;
- **CA4P has shown better efficacy in larger tumors** : In preclinical and clinical studies, CA4P showed markedly improved efficacy compared to the control therapy in larger tumors, in comparison to the efficacy profile of anti-angiogenics and chemotherapeutic agents;
- **Complementary mechanism to anti-angiogenics** : CA4P works synergistically with anti-angiogenics, a widely used and clinically successful type of cancer drug. CA4P interferes with existing tumor vessels, and anti-angiogenics interfere with new tumor vessel growth; and
- **Mechanism-of-action supports use in multiple indications** : Based on the mechanism of action on tumor blood vessels CA4P may also be efficacious in any solid tumor indication where anti-angiogenics are used.

Our second portfolio product, OXi4503, is currently in a Phase 1b study in patients with relapsed/refractory acute myeloid leukemia (AML). OXi4503 is also a potent VDA, and it has been demonstrated in preclinical studies to work in AML by disrupting tumor blood vessels in the bone marrow, forcing otherwise-dormant leukemic stem cells, which are attached to these blood vessels, into circulation in the blood stream as well as into the active cell cycle, where they become vulnerable to chemotherapy.

In preclinical studies, OXi4503 has been shown to enhance the efficacy of cytarabine, idarubucin, azacitidine, and decitabine. In early clinical studies, OXi4503 has shown complete responses in high risk patients both as a monotherapy and in combination with cytarabine. We believe OXi4503 offers the following potential benefits:

- **A unique approach for AML** : We believe that disrupting bone marrow tumor vessels for the treatment of AML is a new approach for a difficult to treat disease, with few competing clinical programs;
- **Potential to be used with many therapies** : AML treatment is highly variable, and many patients receive multiple classes of drugs during the course of their disease. OXi4503 has the potential to enhance the effect of many common AML therapies; and
- **Dual mechanism of action** : When metabolized, OXi4503 becomes both a vascular disrupting agent and a cytotoxic compound that targets malignant cells of myeloid lineage.

Our Strategy and Development Plan

Our primary objective is to definitively establish the efficacy of VDAs for multiple orphan oncology indications. We believe previous solid tumor clinical programs with this class of agents failed to include the key element - combination with an anti-angiogenic agent - as part of the therapeutic regimen. We have designed and are conducting a well-controlled clinical study for CA4P called FOCUS, which we expect to produce efficacy and safety data throughout 2017. We believe the near-term results from FOCUS will lead to a pivotal study in 2018. The key elements of our strategy include:

- **Complete the Phase 2 portion of the FOCUS trial** : We expect data from the second interim analysis of the FOCUS trial to be announced in August 2017. The third interim analysis should take place in September of 2017, and the final interim analysis is expected in November 2017. We believe this data will be sufficient to characterize the efficacy and safety of CA4P in patients with prOC and will demonstrate improvement over the current standard of care for this disease.

- **Expand the FOCUS trial into Phase 3** : Should the Phase 2 portion of FOCUS be successful, we will strive to find a development partner or a strategic partner that can fund the pivotal Phase 3 part of the FOCUS study. We may seek additional financing to conduct this pivotal trial if a partner cannot be identified.
- **Obtain FDA approval for CA4P** : If our FOCUS trial meets its primary endpoint, we plan to submit an NDA with the FDA and EMA in 2020 or 2021 for approval.
- **Advance OXi4503 in AML** : We intend to find a partner to acquire the product, or to finance further clinical studies in this indication following positive results from the first five cohorts for our Phase 1b Study of OXi4503 for the treatment of AML (Study OX1222).
- **Expand our product portfolio** : We will continue to pursue low-cost preclinical programs to generate new opportunities, including the combination of CA4P with immune-oncology agents, and the testing of new classes of compounds identified by our academic collaborators.

Recent Developments

On April 18, 2017, we announced results from the first scheduled interim analysis of the on-going FOCUS Study. The interim analysis was conducted after the first 20 patients enrolled into the trial had been treated for at least two months or had discontinued from the trial. Interim results indicated that no significant CA4P safety issues had been identified in the trial, and that the initial efficacy was in favor of CA4P, with 22% (2/9) of patients in the treatment arm responding to the treatment compared to 9% (1/11) of patients in the control arm.

On June 7, 2017, we announced receipt of a Fast Track designation from the FDA for OXi4503 for the treatment of AML.

On June 12, 2017, we provided an update on our clinical trial programs and milestones. In that update, we reported that as of June 9, 2017, the FOCUS study has enrolled 57 patients in the United States, Germany and Belgium, with enrollment on-going at 37 sites. The second interim analysis, which will occur after the first 40 patients have been treated for at least two months or withdrawn from the study, remains on track to be completed in August 2017. Based on the number of patients enrolled and projected enrollment trends, we expect the third interim analysis, representing 60 patients, to be completed in late September 2017. In addition, we reported that enrollment in a phase 1b/2 investigator-sponsored study (PAZOFOS) being conducted in the U.K., evaluating the combination of CA4P and the TKI-inhibitor pazopanib for patients with advanced recurrent ovarian cancer, has been temporarily suspended by the study sponsor, The Christie NHS Trust, in order to collect and review additional information on two recent serious adverse events. Specifically, one patient in the study experienced hypertension and myocardial ischemia, and a second patient experienced chest pain. In both cases, the events were of short duration and the clinical symptoms resolved. To date, the PAZOFOS study has enrolled and treated 20 patients with CA4P and pazopanib in the phase 1b and phase 2 portions of the trial. The label for pazopanib, which is not approved for the treatment of ovarian cancer in the U.S., contains warnings for cardiac dysfunction, arterial thrombotic events and hypertension. CA4P has been observed in most patients to cause an acute and transient increase in blood pressure following administration. Following review of the data available for the patients in PAZOFOS, we do not believe any changes or adjustments to the FOCUS study are warranted. FOCUS has restrictive enrollment criteria for patients with pre-existing cardiovascular risk factors and specific algorithms for treatment of patients that experience blood pressure increases.

On July 31, 2017, we announced that two out of four patients in the fifth cohort of Study OX1222 had morphological complete remissions after one cycle of treatment with OXi4503.

On August 1, 2017, we announced that we had completed enrollment in the first part of our FOCUS study of CA4P for platinum-resistant ovarian cancer.

Summary Risk Factors

Our business is subject to numerous risks described in the section entitled “Risk Factors” and elsewhere in this prospectus. You should carefully consider these risks before making an investment. Some of these risks include:

- Our product candidates have not completed clinical trials, and may not demonstrate sufficient efficacy or a sufficient safety profile either to justify continuing clinical trials and/or to receive FDA approval for the indications studied;
- We have limited financial resources and will need additional funds to continue our operations, but we may be unable to raise additional capital when it is necessary to do so or to raise additional capital on terms favorable to us;

- If we are unable to obtain required regulatory approvals, we will be unable to market and sell our products;
- If we or the third parties on which we rely to conduct our clinical trials fail to conduct those trials in accordance with good clinical practices and related regulatory requirements, we may not be able to obtain regulatory approval for or commercialize our product candidates;
- We have no manufacturing capacities and have relied on, and will continue to rely on, third party manufacturers to produce our product candidates;
- The use of our products may result in product liability exposure, and we may not have sufficient insurance coverage to cover all claims;
- We depend on a small number of employees and advisors to run our operations;
- We have a history of losses, and we anticipate that we will continue to incur losses in the future;
- Our auditors have included in their audit report an explanatory paragraph as to substantial doubt as to our ability to continue as a going concern;
- Our industry is highly competitive, and our products may become obsolete;
- We depend on patents and proprietary technology and license patents and proprietary technology from others; we must protect our patents and technology and must maintain these licenses in order to protect our business; and
- We have been granted orphan drug status for certain of our product candidates and may seek orphan drug status for other product candidates, but if we are unable to maintain or obtain orphan drug status for our product candidates, we may be unsuccessful in maintaining or obtaining orphan drug exclusivity.

Company Background

We were originally incorporated in 1988 in New York as OXiGENE, Inc. and reincorporated as a Delaware corporation in 1992. In 2016, we changed our name to Mateon Therapeutics, Inc. Our principal corporate office is in the United States at 701 Gateway Boulevard, Suite 210, South San Francisco, California 94080 (telephone: (650) 635-7000). Our Internet address is www.mateon.com. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports, are available to you free of charge through the “Investors & News” section of our website as soon as reasonably practicable after such materials have been electronically filed with, or furnished to, the Securities and Exchange Commission. Information contained on our website does not form a part of this prospectus.

THE OFFERING

Common stock offered by us in this offering	16,666,666 shares.
Pre-funded warrants offered by us in this offering	We are also offering to each purchaser whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if the purchaser so chooses, pre-funded warrants, in lieu of shares of common stock that would otherwise result in the purchaser's beneficial ownership exceeding 4.99% of our outstanding common stock (or at the election of the purchaser, 9.99%). Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant will equal the price per share at which the shares of common stock are being sold to the public in this offering, minus $0.01, and the exercise price of each pre-funded warrant will be $0.01 per share. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. Because we will issue a common warrant for each share of our common stock and for each pre-funded warrant to purchase one share of our common stock sold in this offering, the number of common warrants sold in this offering will not change as a result of a change in the mix of the shares of our common stock and pre-funded warrants sold.
Common warrants offered by us in this offering	Common warrants to purchase an aggregate of 8,333,333 shares of our common stock. Each share of our common stock is being sold together with a common warrant to purchase one half a share of our common stock. Each common warrant will have an exercise price of $ per share, will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the common warrants.
Common stock outstanding before this offering	26,544,934 shares.
Common stock to be outstanding after this offering	43,211,600 shares (assuming no sale of any pre-funded warrants and assuming none of the common warrants issued in this offering are exercised).
Use of proceeds	We intend to use the net proceeds of this offering for research and development activities, including the continuation of our current clinical trials in platinum-resistant ovarian cancer and acute myeloid leukemia, working capital and general corporate purposes. See "Use of Proceeds" for additional information.
Risk factors	You should read the "Risk Factors" section of, and all of the other information set forth in, this prospectus to consider carefully before deciding to purchase any shares of our common stock or pre-funded warrants and the accompanying common warrants in this offering.
OTCQX Marketplace	Our common stock is traded on the OTCQX Marketplace under the symbol "MATN." We do not intend to list the warrants on any securities exchange or nationally recognized trading system.

The number of shares of our common stock that will be outstanding immediately after this offering is based on 26,544,934 shares outstanding as of July 21, 2017 and excludes the following:

- 8,333,333 shares of common stock issuable upon the exercise of warrants to be sold in this offering;
- 666,667 shares of common stock issuable upon the exercise of warrants issued to the placement agent in connection with this offering at an exercise price per share of 125% of the public offering price;
- 9,625,797 shares of common stock issuable upon the exercise of warrants outstanding at a weighted average exercise price of $2.56 per share;

- 5,670,288 shares of common stock issuable upon the exercise of options outstanding at a weighted average exercise price of $1.03 per share;
- 609,191 shares of common stock available for future issuance under the Mateon Therapeutics, Inc. Amended and Restated 2015 Equity Incentive Plan (the "2015 Plan"); and
- 446,302 shares of common stock available for future issuance under the 2017 Equity Incentive Plan (the "2017 Plan").

SUMMARY CONSOLIDATED FINANCIAL DATA

The following summary consolidated financial data should be read together with our audited consolidated financial statements and accompanying notes and "Management Discussion and Analysis of Financial Condition and Results of Operations" appearing in our Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on March 30, 2017 and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed with the SEC on August 2, 2017, each of which are incorporated by reference into this prospectus.

The pro forma balance sheet data gives effect to the sale of securities offered by this prospectus at an assumed aggregate offering amount of $6 million, based on an assumed offering price of $0.36 per share of common stock and associated warrant to purchase common stock sold in this offering and after deducting estimated placement agent fees and offering expenses payable by us. Our historical results are not necessarily indicative of results to be expected for any future period. The summary financial data in this section are not intended to replace our consolidated financial statements and the related notes.

Statement of Operations Data:

(in thousands)	Year ended December 31, 2016	Year ended December 31, 2015	Six months ended June 30, 2017	Six months ended June 30, 2016
			(unaudited)	
Operating expenses:				
Research and development	$ 8,764	$ 9,086	$ 5,867	$ 4,354
General and administrative	4,995	4,596	1,999	2,668
Total operating expenses	13,759	13,682	7,866	7,022
Loss from operations	(13,759)	(13,682)	(7,866)	(7,022)
Interest income	106	27	26	57
Other income (expense), net	(1)	1	(2)	(1)
Net loss and comprehensive loss	$ (13,654)	$ (13,654)	$ (7,842)	$ (6,966)
Basic and diluted net loss per share attributable to common stock	$ (0.51)	$ (0.54)	$ (0.30)	$ (0.26)
Weighted-average number of common shares outstanding	26,545	25,201	26,545	26,545

Balance Sheet Data:

(in thousands)	December 31, 2016	June 30, 2017 (unaudited)	June 30, 2017 (as adjusted, unaudited)
Cash, cash equivalents and short-term investments	$ 12,047	$ 5,004	$ 10,439
Prepaid clinical trial expenses	1,946	1,162	1,162
Other assets	121	363	363
Total assets	$ 14,114	$ 6,529	$ 11,964
Total current liabilities	$ 1,614	$ 1,425	$ 1,425
Total stockholders' equity	12,500	5,104	10,539
Total liabilities and stockholders' equity	$ 14,114	$ 6,529	$ 11,964

A $0.05 increase or decrease in the assumed public offering price of $0.36 per share of common stock and associated warrant, the last reported sale price for our common stock as reported on the OTCQX Marketplace on July 31, 2017, would decrease or increase the number of shares of our common stock issued in this offering and issuable upon the exercise of pre-funded warrants issued in this offering by approximately 2.0 million shares or 2.7 million shares, respectively.

Similarly, a one million share increase or decrease in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease the net proceeds to us by approximately $337,000, assuming the assumed combined public offering price of $0.36 per share and accompanying warrant remains the same, and after deducting estimated placement agent fees and expenses and estimated offering expenses payable by us.

R ISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully review and consider the following risk factors and in the sections entitled "Risk Factors" contained in our most recent annual report on Form 10-K, which has been filed with the SEC and is incorporated by reference in this prospectus, as well as any updates thereto contained in subsequent filings with the SEC, and all other information contained in this prospectus and incorporated by reference into the prospectus before purchasing our securities. The risks and uncertainties described below are not the only ones facing our Company. Additional risks and uncertainties that we are unaware of, or that we currently deem immaterial, also may become important factors that affect us. If any of the following risks occur, our business, financial condition or results of operations could be materially and adversely affected. In that case, the trading price of our common stock could decline, and you may lose some or all of your investment.

Risks Related to Our Business

We need to raise additional funds to finance our planned operations and continue the development of our product candidates, and we may not be able to do so when necessary. Even if we are able to raise additional funds, the terms of any financings may not be advantageous to us.

Our operations to date have consumed substantial amounts of cash. Negative cash flows from our operations are expected to continue over at least the next several years. Our cash utilization amount is highly dependent on the product development programs we choose to pursue, the progress of these product development programs, the results of our preclinical studies and clinical trials, the cost, timing and outcomes of regulatory decisions regarding potential approval for our product candidates, the terms and conditions of our contracts with service providers for these programs, and the rate of recruitment of patients in our human clinical trials. In addition, the continuation of our clinical trials, and quite possibly our entire business, will depend on results of upcoming analyses and our financial resources at the time.

In order to continue the development of our product candidates, we are pursuing forms of capital infusion including public or private financing, strategic partnerships or other arrangements with organizations that have capabilities, products and/or resources that are complementary to or could further extend our own capabilities, products or resources. However, there can be no assurances that we will complete any financings, strategic alliances or collaborative development agreements, and the terms of such arrangements may not be advantageous to us.

Based on our current operating plans and assuming operations as presently planned, we expect our existing cash, without taking into account any proceeds of this offering, to support our operations into approximately October 2017. We expect that our planned level of cash utilization will allow us to advance our ongoing programs, including completion of at least two more interim analyses of our Phase 2/3 FOCUS Study of CA4P in combination with bevacizumab and chemotherapy in platinum-resistant ovarian cancer; completion of the treatment in the fifth cohort of an open-label Phase 1b/2 clinical trial of OXi4503 in combination with cytarabine in patients with AML; supporting a Phase 2 trial of CA4P in relapsed ovarian cancer in combination with pazopanib, which is being sponsored by two UK-based nonprofit organizations; and additional preclinical studies of CA4P in combination with immune oncology agents. Any significant further clinical development of CA4P, including the completion of the Phase 2/3 clinical trial of CA4P in ovarian cancer, and of OXi4503 would be contingent upon our ability to raise additional capital through public or private financings or from one or more new collaborative research or license agreements with a third-party, as to which we can give you no assurance.

Our ongoing capital requirements will depend on numerous factors, including the progress and results of preclinical testing and clinical trials of our product candidates under development; the costs of complying with the FDA and other regulatory agency requirements; the progress of our research and development programs; the time and costs expended and required to obtain any necessary or desired regulatory approvals; our ability to enter into licensing arrangements, including any unanticipated licensing arrangements that may be necessary to enable us to continue our development and clinical trial programs; the costs and expenses of filing, prosecuting and, if necessary, enforcing our patent claims, or defending against possible claims of infringement by third-party patent or other technology rights; the cost of commercialization activities and arrangements, if any, undertaken by us; and, if and when approved, the demand for our products, which demand depends in turn on circumstances and uncertainties that cannot be fully known, understood or quantified unless and until the time of approval, including the range of indications for which any product is granted approval.

Our ability to raise additional capital was significantly impaired following the delisting of our common stock from The NASDAQ Capital Market. If we are unable to raise additional funds when needed, we will not be able to continue development of our product candidates or we will be required to delay, scale back or eliminate some or all of our development programs or cease operations. We may seek to raise funds through public or private financing, strategic partnerships or other arrangements. Any additional equity or convertible debt financing may be dilutive to our current stockholders and debt financing, if available, may involve restrictive covenants. If we raise funds through collaborative or licensing arrangements, we may be required to relinquish, on terms that are not favorable to us, rights to some of our technologies or product candidates that we would otherwise seek to develop or commercialize. Our failure to raise capital when needed will materially harm our business, financial condition and results of operations.

Due in part to our limited financial resources, we may fail to select or capitalize on the most scientifically, clinically or commercially promising or profitable indications or therapeutic areas for our product candidates, and we may be unable to pursue and complete the clinical trials that we would like to pursue and complete.

We have limited financial and technical resources to determine the indications on which we should focus the development efforts for our product candidates. Due to our limited available financial resources, we have curtailed clinical development programs and activities that might otherwise have led to more rapid progress of our product candidates through the regulatory and development processes. Further, our current clinical trial in platinum-resistant ovarian cancer is designed to be larger than any other clinical trial that we have conducted previously. We currently do not have the financial resources to complete this clinical trial, and cannot assure you that we will be able to obtain sufficient financial resources to complete the trial. If we are forced to terminate the trial early, our chances of obtaining positive results from the clinical trial are likely to be reduced, due to the lower statistical power of smaller clinical trials.

We may make incorrect determinations with regard to the indications and clinical trials on which to focus the available resources that we do have. Furthermore, we cannot assure you that we will be able to retain adequate staffing levels to run our operations and/or to accomplish all of the objectives that we otherwise would seek to accomplish. We currently are pursuing clinical trials in several indications, but we are required by our financial resources to engage only in limited clinical activities. The decisions to allocate our research, management and financial resources toward particular indications or therapeutic areas for our product candidates may not lead to the development of viable commercial products and may divert resources from better opportunities. Similarly, our decisions to delay or terminate drug development programs may also cause us to miss valuable opportunities. In addition, from time to time, we may in-license or otherwise acquire product candidates to supplement our internal development activities. Those activities may use resources that otherwise would have been devoted to our internal programs, and with research and development programs there is no way to assure that the outcome of any trials or other activities will be positive, whether the program was internally generated or in-licensed.

If we are unable to obtain required regulatory approvals, we will be unable to market and sell our product candidates.

Our product candidates are subject to extensive governmental regulations relating to development, clinical trials, manufacturing, oversight of clinical investigators, recordkeeping and commercialization. Rigorous preclinical testing and clinical trials and an extensive regulatory review and approval process are required to be successfully completed in the United States, in the European Union and in many other foreign jurisdictions before a new drug can be sold. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain, and subject to unanticipated delays. The time required to obtain approval by the FDA or the European Medicines Agency, or EMA, is unpredictable and often takes many years following the commencement of clinical trials.

In connection with the clinical development of our product candidates, we face risks that:

- the product candidate may not prove to be safe and efficacious;
- patients may die or suffer serious adverse effects for reasons that may or may not be related to the product candidate being tested;
- we fail to maintain adequate records of observations and data from our clinical trials, to establish and maintain sufficient procedures to oversee, collect data from, and manage clinical trials, or to monitor clinical trial sites and investigators to the satisfaction of the FDA, EMA or other regulatory agencies;
- we may not have sufficient financial resources to complete the clinical trials that would be necessary to obtain regulatory approvals;
- the results of later-phase clinical trials may not confirm the results of earlier clinical trials;
- the results of later-phase clinical trials may not confirm the results of earlier clinical trials; and
- the results from clinical trials may not meet the level of statistical significance or clinical benefit-to-risk ratio required by the FDA, EMA or other regulatory agencies for marketing approval.

Only a small percentage of product candidates for which clinical trials are initiated are the subject of NDAs and even fewer receive approval for commercialization. Furthermore, even if we do receive regulatory approval to market a product candidate, any such approval may be subject to limitations such as those on the indicated uses for which we may market the product.

If we or the third parties on which we rely for the conduct of our clinical trials and results do not perform our clinical trial activities in accordance with good clinical practices and related regulatory requirements, we may not be able to obtain regulatory approval for or commercialize our product candidates.

We currently use independent clinical investigators in all of our clinical trials and, in many cases, also utilize contract research organizations, or CROs, and other third-party service providers to conduct and/or oversee the clinical trials of our product candidates and expect to continue to do so for the foreseeable future. We rely heavily on these parties for successful execution of our clinical trials. Nonetheless, we are responsible for confirming that each of our clinical trials is conducted in accordance with the FDA's requirements and our general investigational plan and protocol. Currently, we have clinical trial activities involving CA4P and OXi4503 being conducted by clinical investigators who are independent of us, but with whom we have agreements for them to provide the results of their clinical trials to us. In order for us to rely on data from these ongoing clinical trials in support of a New Drug Application, or NDA, for approval of any of our product candidates by the FDA or similar types of marketing applications that are required by other regulatory authorities, the independent investigators are required to comply with applicable good clinical practice requirements.

The FDA and corresponding foreign regulatory authorities require us and our clinical investigators to comply with regulations and standards, commonly referred to as good clinical practices, or GCPs, for conducting and recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the trial participants are adequately protected. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. Third parties may not complete activities on schedule or may not conduct our clinical trials in accordance with regulatory requirements or the respective trial plans and protocols. The failure of these third parties to carry out their obligations could delay or prevent the development, approval and commercialization of our product candidates or result in enforcement action against us.

We have taken and continue to take steps to strengthen our procedures and practices , but we cannot assure you that the FDA will be satisfied with our procedures or that the FDA will not issue warning letters or take other enforcement action against us in the future. The steps we take to strengthen our procedures and conduct future clinical trials necessary for approval will be time-consuming and expensive.

We may encounter difficulties in expanding our operations successfully if and when we evolve from a company that is primarily involved in clinical development to a company that is also involved in commercialization.

As we advance our product candidates through later stages of clinical trials, we will need to expand our development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to provide these capabilities for us. As our operations expand, we expect that we will need to manage additional relationships with such third parties, as well as additional collaborators, distributors, marketers and suppliers.

Maintaining third party relationships for these purposes will impose significant added responsibilities on members of our management and other personnel. We must be able to manage our development efforts effectively, manage our participation in the clinical trials in which our product candidates are involved effectively, and improve our managerial, development, operational and finance systems, all of which may impose a strain on our administrative and operational infrastructure.

If, following any approval of our product candidates, we enter into arrangements with third parties to perform sales, marketing or distribution services, any product revenues that we receive, or the profitability of these product revenues to us, are likely to be lower than if we were to market and sell any products that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell and market our products or in doing so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our products.

If we were to submit an NDA for our drug candidates in the United States or a marketing application in the EU, we would need to undertake commercial scale manufacturing activities at significant expense to us in order to proceed with the application for approval for commercialization. We or our external vendors may encounter technical difficulties that preclude us from successfully manufacturing the required registration and validation batches of active pharmaceutical ingredient, or API, and/or drug product and we may be unable to recover any financial losses associated with the manufacturing activities. Further, our research or product development efforts may not be successfully completed, any compounds currently under development by us may not be successfully developed into drugs, any potential products may not receive regulatory approval on a timely basis, if at all, and competitors may develop and bring to market products or technologies that render our potential products obsolete. If any of these problems occur, our business would be materially and adversely affected.

We have no manufacturing capacity and have relied on, and expect to continue to rely on, third-party manufacturers to produce our product candidates.

We do not own or operate manufacturing facilities for the production of clinical or commercial quantities of our product candidates or any of the compounds that we are testing in our preclinical programs, and we lack the resources and the capabilities to do so. As a result, we currently rely, and we expect to rely for the foreseeable future, on third-party manufacturers to supply our product candidates. Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured our product candidates or products ourselves, including:

- reliance on third-parties for manufacturing process development, regulatory compliance and quality assurance;
- limitations on supply availability resulting from capacity and scheduling constraints of third-parties;
- the possible breach of manufacturing agreements by third-parties because of factors beyond our control; and
- the possible termination or non-renewal of the manufacturing agreements by the third-party, at a time that is costly or inconvenient to us.

If we do not maintain our developed important manufacturing relationships, we may fail to find replacement manufacturers or develop our own manufacturing capabilities, which could delay or impair our ability to obtain regulatory approval for our products and substantially increase our costs or deplete profit margins, if any. If we do find replacement manufacturers, we may not be able to enter into agreements with them on terms and conditions favorable to us, and there could be a substantial delay before new facilities could be qualified and registered with the FDA, EMA and other foreign regulatory authorities.

The FDA, EMA and other foreign regulatory authorities require manufacturers to register manufacturing facilities. The FDA and corresponding foreign regulators also inspect these facilities to confirm compliance with current good manufacturing practices, or cGMPs. Contract manufacturers may face manufacturing or quality control problems causing drug substance production and shipment delays or a situation where the contractor may not be able to maintain compliance with the applicable cGMP requirements. Any failure to comply with cGMP requirements or other FDA, EMA and comparable foreign regulatory requirements could adversely affect our clinical research activities and our ability to develop our product candidates and market our products after approval.

Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our ability to develop our product candidates, our ability to commercialize any products that receive regulatory approval and our potential future profit margins on these products.

Our product candidates have not completed clinical trials, and may never demonstrate sufficient safety and efficacy in order to do so.

Our product candidates are in the clinical stage of development. In order to achieve profitable operations, we alone or in collaboration with others, must successfully develop, manufacture, introduce and market our products. The time frame necessary to achieve market success for any individual product is long and uncertain. The products currently under development by us may require significant additional research and development and additional preclinical and clinical testing prior to application for commercial use. A number of companies in the biotechnology and pharmaceutical industries have suffered significant setbacks in clinical trials, even after showing promising results in early or later-stage studies or clinical trials. Although we have obtained some favorable results to date in preclinical studies and clinical trials of certain of our potential products, such results may not be indicative of results that will ultimately be obtained in or throughout such clinical trials, and clinical trials may not show any of our products to be safe or capable of producing a desired result. Additionally, we may encounter problems in our clinical trials that may cause us to delay, suspend or terminate those clinical trials.

Adverse events observed to date and associated with CA4P and OXi4503 have generally been found to be manageable for drugs treating the indications for which we are developing our product candidates. However, we will be required to continue to test and evaluate the safety of our product candidates in additional clinical trials, and to demonstrate their safety to the satisfaction of appropriate regulatory agencies, as a condition to receipt of any regulatory approvals. In clinical trials to date, transient hypertension believed to be associated with CA4P and OXi4503 has been effectively managed through pre-treatment with anti-hypertensive medication. We cannot assure you, however, that we will be able to make the necessary demonstrations of safety to allow us to receive regulatory approval for our product candidates in any indication.

We only have a limited number of employees to manage and operate our business.

As of June 30, 2017, we had a total of 14 full-time employees. Our limited financial resources require us to manage and operate our business in a highly efficient manner. We cannot assure you that we will be able to retain adequate staffing levels to run our operations and/or to accomplish all of the objectives that we otherwise would seek to accomplish.

We have a history of losses, and we anticipate that we will continue to incur losses in the future; our auditors have included in their audit report an explanatory paragraph as to substantial doubt as to our ability to continue as a going concern.

We have experienced net losses every year since our inception and, as of June 30, 2017, had an accumulated deficit of over $286 million. Our auditors have included in their audit report a “going concern” explanatory paragraph as to substantial doubt as to our ability to continue as a going concern that assumes the realization of our assets and the satisfaction of our liabilities and commitments in the normal course of business. We anticipate continuing to incur substantial additional losses over at least the next several years due to, among other factors, our continuing clinical trials and development activities with respect to our VDA drug candidates, technologies, and anticipated research and development activities and the general and administrative expenses associated with those activities. We have not yet commercialized any product candidates. Our ability to attain profitability will depend upon our ability to develop and commercialize products that are effective and commercially viable, to obtain regulatory approval for the manufacture and sale of our products and to license or otherwise market our products successfully. We may never achieve profitability.

We depend on our executive officers and principal consultants and the loss of their services could materially harm our business.

We believe that our success depends, and will likely continue to depend, upon our ability to retain the services of our current executive officers, principal consultants and others. The loss of the services of any of these individuals could have a material adverse effect on our business. In addition, we have established relationships with universities, hospitals and research institutions, which have historically provided, and continue to provide, us with access to research laboratories, clinical trials, facilities and patients. Additionally, we believe that we may, at any time and from time to time, materially depend on the services of consultants and other unaffiliated third parties. We cannot assure you that consultants and other unaffiliated third parties will provide the level of service to us that we require in order to achieve our business objectives.

Our industry is highly competitive, and our product candidates may become obsolete.

We are engaged in a rapidly evolving field. Competition from other pharmaceutical companies, biotechnology companies and research and academic institutions is intense and likely to increase. Many of those companies and institutions have substantially greater financial, technical and human resources than we do. Many of those companies and institutions also have substantially greater experience in developing products, conducting clinical trials, obtaining regulatory approval and in manufacturing and marketing pharmaceutical products. Our competitors may succeed in obtaining regulatory approval for their products more rapidly than we do. Competitors have developed or are in the process of developing technologies that are, or in the future may be, the basis for competitive products. We are aware of at least four other companies that currently have a clinical-stage VDA for use in an oncology indication. Some of these competitive products may have an entirely different approach or means of accomplishing the desired therapeutic effect than products being developed by us. Our competitors may succeed in developing products that are more effective and/or cost competitive than those we are developing, or that would render our product candidates less competitive or even obsolete. In addition, one or more of our competitors may achieve product commercialization or patent protection earlier than we do, which could materially adversely affect us.

We depend extensively on the patents and proprietary technology we license from others, and we must maintain these licenses in order to preserve our business.

We have licensed in rights to CA4P, OXi4503 and other programs from third parties. If our license agreements terminate or expire, we may lose the licensed rights to our product candidates, including CA4P and OXi4503, and we may not be able to continue to develop them or, if they are approved, we may not be able to market or commercialize them.

We depend on license agreements with third-parties for certain intellectual property rights relating to our product candidates, including patent rights. Currently, we have licensed in certain patent rights from Arizona State University, or ASU, and the Bristol-Myers Squibb Company for CA4P and OXi4503 and from Baylor University for other programs. In general, our license agreements require us to make payments and satisfy performance obligations in order to keep these agreements in effect and retain our rights under them. These payment obligations can include upfront fees, maintenance fees, milestones, royalties, patent prosecution expenses, and other fees. These performance obligations typically include diligence obligations. If we fail to pay, be diligent or otherwise perform as required under our license agreements, we could lose the rights under the patents and other intellectual property rights covered by the agreements. While we are not currently aware of any dispute with any licensors under our material agreements with them, if disputes arise under any of our in-licenses, including our in-licenses from ASU, the Bristol-Myers Squibb Company and Baylor University, we could lose our rights under these agreements. Any such dispute may not be resolvable on favorable terms, or at all. Whether or not any disputes of this kind are favorably resolved, our management's time and attention and our other resources could be consumed by the need to attend to and seek to resolve these disputes and our business could be harmed by the emergence of such a dispute.

If we lose our rights under these agreements, we may not be able to conduct any further activities with the product candidate or program that the license covered. If this were to happen, we might not be able to develop our product candidates further, or following regulatory approval, if any, we might be prohibited from marketing or commercializing them. In particular, patents previously licensed to us, such as the patents we previously licensed from Angiogene, might after termination be used to stop us from conducting activities in the patents' respective fields.

We depend on patents and proprietary technology in the course of our business, and we must protect those assets in order to preserve our business.

Although we expect to seek patent protection for any compounds we discover and/or for any specific use we discover for new or previously known compounds, any or all of them may not be subject to effective patent protection. Further, the development of regimens for the administration of pharmaceuticals, which generally involve specifications for the frequency, timing and amount of dosages, has been, and we believe, may continue to be, important to our effort, although those processes, as such, may not be patentable. In addition, the issued patents may be declared invalid or our competitors may find ways to avoid the claims in the patents.

Our success will depend, in part, on our ability to obtain patents, protect our trade secrets and operate without infringing on the proprietary rights of others. We are the exclusive licensee, sole assignee or co-assignee on a number of granted United States patents, pending United States patent applications, and granted patents and/or pending applications in several other major markets, including the European Union, Canada and Japan. The patent position of pharmaceutical and biotechnology firms like us is generally highly uncertain and involves complex legal and factual questions, resulting in both an apparent inconsistency regarding the breadth of claims allowed in United States patents and general uncertainty as to their legal interpretation and enforceability. Accordingly, patent applications assigned or exclusively licensed to us may not result in patents being issued, any issued patents assigned or exclusively licensed to us may not provide us with competitive protection or may be challenged by others, and the current or future granted patents of others may have an adverse effect on our ability to do business and achieve profitability. Moreover, because some of the basic research relating to one or more of our patent applications and/or patents were performed at various universities and/or funded by grants, one or more of these universities, employees of such universities and/or grantors could assert that they have certain rights in such research and any resulting products. Further, others may independently develop similar products, may duplicate our products, or may design around our patent rights. In addition, as a result of the assertion of rights by a third-party or otherwise, we may be required to obtain licenses to patents or other proprietary rights of others in or outside of the United States. Any licenses required under any such patents or proprietary rights may not be made available on terms acceptable to us, if at all. If we do not obtain such licenses, we could encounter delays in product market introductions while our attempts to design around such patents or could find that the

development, manufacture or sale of products requiring such licenses is foreclosed. In addition, we could incur substantial costs in defending ourselves in suits brought against us or in connection with patents to which we hold licenses or in bringing suit to protect our own patents against infringement.

We require employees and the institutions that perform our preclinical and clinical trials to enter into confidentiality agreements with us. Those agreements provide that all confidential information developed or made known to a party to any such agreement during the course of the relationship with us be kept confidential and not be disclosed to third-parties, except in specific circumstances. Any such agreement may not provide meaningful protection for our trade secrets or other confidential information in the event of unauthorized use or disclosure of such information.

The use of our products may result in product liability exposure, and it is uncertain whether our insurance coverage will be sufficient to cover all claims.

The use of our product candidates in clinical trials may expose us to liability claims in the event such product candidates cause death, injury or disease, or result in adverse effects. We may be exposed to liability claims even if our product did not cause death, injury or diseases, but is merely presumed or alleged to have caused any of these. If our product candidates are ever commercially approved, the commercial use of these products may also expose us to similar liability claims. Any of these claims could be made by health care institutions, contract laboratories, patients or others using such products. Although we have obtained liability insurance coverage for our ongoing clinical trials, this coverage may not be in amounts sufficient to protect us from any product liability claims or product recalls which could have a material adverse effect on our financial condition and prospects. Further, adverse product and similar liability claims could negatively impact our ability to obtain or maintain regulatory approvals for our technology and product candidates under development.

If clinical trials or regulatory approval processes for our product candidates are prolonged, delayed or suspended, we may be unable to out-license or commercialize our product candidates on a timely basis, which would require us to incur additional costs and delay or prevent our receipt of any proceeds from potential license agreements or product sales.

We cannot predict whether we will encounter problems with any of our completed, ongoing or planned clinical trials that will cause us or any regulatory authority to delay or suspend those clinical trials or delay or invalidate the analysis of data derived from them. A number of events, including any of the following, could delay the completion of our other ongoing and planned clinical trials and negatively impact our ability to obtain regulatory approval for, and to market and sell, a particular product candidate:

- conditions imposed on us by the FDA, EMA or another foreign regulatory authority regarding the scope or design of our clinical trials;
- delays in obtaining, or our inability to obtain, required approvals from institutional review boards or other reviewing entities at clinical sites selected for participation in our clinical trials;
- insufficient supply of our product candidates or other materials necessary to conduct and complete our clinical trials;
- slow enrollment and retention rate of subjects in clinical trials;
- any compliance audits and pre-approval inspections by the FDA, EMA or other regulatory authorities;
- negative or inconclusive results from clinical trials, or results that are inconsistent with earlier results;
- serious and unexpected drug-related side effects; and
- failure of our third-party contractors to comply with regulatory requirements or otherwise meet their contractual obligations to us.

Commercialization or licensure of our product candidates may be delayed or prevented by the imposition of additional conditions on our clinical trials by the FDA, EMA or another foreign regulatory authority or the requirement of additional supportive clinical trials by the FDA, EMA or another foreign regulatory authority. In addition, clinical trials require sufficient patient enrollment, which is a function of many factors, including the size of the patient population, the nature of the trial protocol, the proximity of patients to clinical sites, the availability of effective treatments for the relevant disease, the conduct of other clinical trials that compete for the same patients as our clinical trials, and the eligibility criteria for our clinical trials. Our failure to enroll patients in our clinical trials could delay the completion of the clinical trial beyond our expectations, or it could prevent us from being able to complete the clinical trial. In addition, the FDA and EMA could require us to conduct clinical trials with a larger number of subjects than we have projected for any of our product candidates. We may not be able to enroll a sufficient number of patients in a timely or cost-effective manner. Furthermore, enrolled patients may drop out of our clinical trials, which could impair the validity or statistical significance of the clinical trials.

We do not know whether our clinical trials will begin as planned, will need to be restructured, or will be completed on schedule, if at all. Delays in our clinical trials will result in increased development costs for our product candidates, and our financial resources may be insufficient to fund any incremental costs. In addition, if our clinical trials are delayed, our competitors may be able to bring products to market before we do and the commercial viability of our product candidates could be limited.

We have been granted orphan drug status for certain of our product candidates and may seek orphan drug status for additional indications for those product candidates or for additional product candidates. We may be unsuccessful in maintaining orphan drug exclusivity for our product candidates and may be unsuccessful in our efforts to seek orphan drug status and orphan drug exclusivity.

Regulatory authorities in some jurisdictions, including the United States and the European Union, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a disease with a patient population of fewer than 200,000 individuals in the United States. Our product candidate, CA4P, has been awarded orphan drug status by the FDA for the treatment of anaplastic, medullary, Stage IV papillary and Stage IV follicular thyroid cancers, ovarian cancer, neuroendocrine tumors and glioma. Our product candidate, OXi4503, has been awarded orphan drug status by the FDA for the treatment of acute myelogenous leukemia. CA4P has also been awarded orphan drug status by the European Commission in the European Union for the treatment of anaplastic thyroid cancer, ovarian cancer and neuroendocrine tumors. OXi4503 has been awarded orphan drug status by the European Commission in the European Union for the treatment of acute myelogenous leukemia.

Generally, if a product with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the EMA or the FDA from approving another marketing application for the same drug for the same indication during the period of exclusivity. The applicable period is seven years in the United States and ten years in the European Union. The European exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or the EMA determines that the request for designation was materially defective, if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition.

Even if we obtain orphan drug exclusivity for a product candidate or additional product candidates, that exclusivity may not effectively protect the product candidate from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve a different drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

Our product candidates will remain subject to ongoing regulatory review even if they receive marketing approval, and if we fail to comply with continuing regulations, we could lose these approvals and the sale of any approved commercial products could be suspended.

Even if we receive regulatory approval to market a particular product candidate, the manufacturing, labeling, packaging, adverse event reporting, storage, advertising, promotion, and record keeping related to the product will remain subject to extensive regulatory requirements. If we fail to comply with the regulatory requirements of the FDA, EMA and other applicable domestic and foreign regulatory authorities or previously unknown problems with any approved product, manufacturer, or manufacturing process are discovered, we could be subject to administrative or judicially imposed sanctions, including:

- restrictions on the products, manufacturers, or manufacturing processes;
- warning letters;
- civil or criminal penalties;
- fines;
- injunctions;
- product seizures or detentions;
- pressure to initiate voluntary product recalls;
- suspension or withdrawal of regulatory approvals; and
- refusal to approve pending applications for marketing approval of new products or supplements to approved applications.

If physicians and patients do not accept our future products or if the market for indications for which any product candidate is approved is smaller than expected, we may be unable to generate significant revenue, if any.

Even if any of our product candidates obtain regulatory approval, they may not gain market acceptance among physicians, patients, and third-party payers. Physicians may decide not to prescribe our drugs for a variety of reasons including:

- timing of market introduction of competitive products;
- demonstration of clinical safety and efficacy compared to other products;

- cost-effectiveness;
- limited or no coverage by third-party payers;
- convenience and ease of administration;
- prevalence and severity of adverse side effects;
- restrictions in the label of the drug;
- other potential advantages of alternative treatment methods; and
- ineffective marketing and distribution support of our products.

If any of our product candidates is approved, but fails to achieve market acceptance, we may not be able to generate significant revenue and our business would suffer.

The uncertainty associated with pharmaceutical reimbursement and related matters may adversely affect our business.

Market acceptance and sales of any one or more of our product candidates that we develop will depend on reimbursement policies and may be affected by future healthcare reform measures in the United States and in foreign jurisdictions. Government authorities and third-party payers, such as private health insurers and health maintenance organizations, decide which drugs they will cover and establish payment levels. We cannot be certain that reimbursement will be available for any product candidates that we develop. Also, we cannot be certain that reimbursement policies will not reduce the demand for, or the price paid for, our products. If reimbursement is not available or is available on a limited basis, we may not be able to successfully commercialize any product candidates that we develop.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, also called the Medicare Modernization Act, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation established Medicare Part D, which expanded Medicare coverage for outpatient prescription drug purchases by the elderly but provided authority for limiting the number of drugs that will be covered in any therapeutic class. The MMA also introduced a new reimbursement methodology based on average sales prices for physician-administered drugs.

The United States and several foreign jurisdictions are considering, or have already enacted, a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payers in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access to healthcare. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. We expect to experience pricing pressures in connection with the sale of any products that we develop due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative proposals.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively, ACA, became law in the U.S. The goal of ACA is to reduce the cost of health care and substantially change the way h health care is financed by both government and private insurers. While we cannot predict what impact on federal reimbursement policies this legislation will have in general or on our business specifically, the ACA may result in downward pressure on pharmaceutical reimbursement, which could negatively affect market acceptance of, and the price we may charge for, any products we develop that receive regulatory approval. We also cannot predict the impact of ACA on us as many of the ACA reforms require the promulgation of detailed regulations implementing the statutory provisions, which have not yet been fully implemented.

More recently, the current U.S. presidential administration has made statements suggesting plans to seek repeal of all or portions of the ACA, and the U.S. Congress is considering such repeal or partial repeal and replacement. There is uncertainty regarding the impact that the President's administration may have on matters currently governed by the ACA, if any, and any regulatory or legislative changes will likely take time to unfold. These changes could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. However, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.

Our operations and the financial results of our operations could be adversely affected by general conditions in the global economy and in the global financial markets. Global financial concerns have caused, and may continue to cause, extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including our ability to raise additional capital when needed on acceptable terms, if at all. We cannot currently anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

Our business and operations could suffer in the event of system failures.

Despite the implementation of security measures, our internal computer systems and those of our third-party CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Furthermore, we have little or no control over the security measures and computer systems of our third-party CROs and other contractors and consultants. While we have not experienced any material system failure, accident, or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in material disruption of our programs. For example, the loss of clinical trial data for our product candidates could result in delays in our marketing approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of our product candidates could be delayed.

Our employees, principal investigators, CROs and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk that our employees, principal investigators, CROs and consultants may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violate the regulations of the FDA and other regulatory authorities, including those laws requiring the reporting of true, complete and accurate information to such authorities; healthcare fraud and abuse laws and regulations in the United States and abroad; or laws that require the reporting of financial information or data accurately. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. Activities subject to these laws also involve the improper use of information obtained in the course of clinical trials or creating fraudulent data in our preclinical studies or clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation.

We have a code of conduct applicable to all of our employees, but it is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

We, or the third parties upon whom we depend, may be adversely affected by earthquakes or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Earthquakes or other natural disasters could severely disrupt our operations and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business.

Risks Related To Our Common Stock

The price of our common stock is volatile, and is likely to continue to fluctuate due to reasons beyond our control; a limited public trading market may cause volatility in the price of our common stock.

The market price of our common stock has been, and likely will continue to be, highly volatile. Factors, including our financial results or our competitors' financial results, clinical trial and research development announcements and government regulatory action affecting our potential products in both the United States and foreign countries, have had, and may continue to have, a significant effect on our results of operations and on the market price of our common stock. We cannot assure you that an investment in our common stock will not fluctuate significantly. One or more of these factors could significantly harm our business and cause a decline in the price of our common stock in the public market. Substantially all of the shares of our common stock issuable upon exercise of outstanding options and warrants have been registered or are likely to be registered for resale or are available for sale pursuant to Rule 144 under the Securities Act, and may be sold from time to time. Such sales, as well as future sales of our common stock by existing stockholders, or the perception that sales may occur at any time, could adversely affect the market price of our common stock.

Our common stock is currently quoted on the OTCQX Marketplace. The quotation of our common stock on the OTCQX Marketplace does not assure that a meaningful, consistent and liquid trading market currently exists, and in recent years such market has experienced extreme price and volume fluctuations that have particularly affected the market prices of many smaller companies like us. Our common stock is subject to this volatility. Sales of substantial amounts of common stock, or the perception that such sales might occur, could adversely affect prevailing market prices of our common stock and our stock price may decline substantially in a short time and our stockholders could suffer losses or be unable to liquidate their holdings.

We may not be able to achieve secondary trading of our stock in certain states because our common stock is no longer nationally traded, which could subject our stockholders to significant restrictions and costs.

Our common stock is not currently eligible for trading on the NASDAQ Capital Market or on a national securities exchange. Therefore, our common stock is subject to the securities laws of the various states and jurisdictions of the United States in addition to federal securities law. While we may register our common stock or qualify for exemptions for our common stock in one of more states, if we fail to do so the investors in those states where we have not taken such steps may not be allowed to purchase our stock or those who presently hold our stock may not be able to resell their shares without substantial effort and expense. These restrictions and potential costs could be significant burdens on our stockholders.

If at any time our common stock is subject to the Securities and Exchange Commission's "penny stock" rules, broker-dealers may experience difficulty in completing customer transactions and trading activity in our securities may be adversely affected.

If at any time we have net tangible assets of $2,000,000 or less and our common stock has a market price per share of less than $5.00, transactions in our common stock will be subject to the SEC's "penny stock" rules. The designation of our common stock as a "penny stock" would limit the liquidity of our common stock. Prices for penny stocks are often not available to buyers and sellers and the market may be very limited. Penny stocks are among the riskiest equity investments. Broker-dealers who sell penny stocks must provide purchasers of these stocks with a standardized risk-disclosure document prepared by the SEC. The document provides information about penny stocks and the nature and level of risks involved in investing in the penny stock market. A broker must also provide purchasers with bid and offer quotations and information regarding broker and salesperson compensation and make a written determination that the penny stock is a suitable investment for the purchaser and obtain the purchaser's written agreement to the purchase. Many brokers choose not to participate in penny stock transactions. Because of the penny stock rules, there may be less trading activity in penny stocks. If shares of our common stock become subject to these penny stock rules, your ability to trade or dispose of shares of our common stock may be adversely effected.

If we fail to maintain an effective system of internal controls over financial reporting, we may not be able to accurately report our financial results. As a result, current and potential stockholders could lose confidence in our financial reporting, which could harm our business and the trading price of our stock.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports. If we cannot maintain effective controls and reliable financial reports, our business and operating results could be harmed. For example, during the third quarter of 2013, our management determined that we had a material weakness related to the operation of our controls over financial reporting associated with a complex non-routine financing transaction in the second quarter of 2013. We conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2016 based on the criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Based on that evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2016. We continue to work on maintaining effective internal controls over financial reporting; however, there can be no assurance that another material weakness will not occur in the future. Any failure to implement and maintain controls over our financial reporting or difficulties encountered in the implementation of improvements in our controls, could cause us to fail to meet our reporting obligations. Any failure to maintain our internal controls over financial reporting or to address identified weaknesses in the future, if they were to occur, could also cause investors to lose confidence in our reported financial information, which could have a negative impact on the trading price of our stock.

Issuance of additional equity securities may adversely affect the market price of our common stock.

We are currently authorized to issue up to 70,000,000 shares of our common stock and 15,000,000 shares of preferred stock. As of June 30, 2017, we had approximately 26,545,000 shares of common stock issued and outstanding, and we had no shares of preferred stock outstanding. As of June 30, 2017, we also had approximately 9,626,000 warrants and 5,941,000 options outstanding. To the extent that shares of common stock are issued or options and warrants are exercised, holders of our common stock will experience dilution. In addition, in the event of any future issuances of equity securities or securities convertible into or exchangeable for common stock, holders of our common stock may experience dilution.

Moreover, our board of directors is authorized to issue preferred stock without any action on the part of our stockholders. Our board of directors also has the power, without stockholder approval, to set the terms of any such preferred stock that may be issued, including voting rights, conversion rights, dividend rights, preferences over our common stock with respect to dividends or if we liquidate, dissolve or wind up our business and other terms. If we issue preferred stock in the future that has preference over our common stock with respect to the payment of dividends or upon our liquidation, dissolution or winding up, or if we issue preferred stock with voting rights that dilute the voting power of our common stock, the market price of our common stock could decrease. Any provision permitting the conversion of any such preferred stock into our common stock could result in significant dilution to the holders of our common stock.

We also consider from time to time various strategic alternatives that could involve issuances of additional common stock, including but not limited to acquisitions and business combinations, but do not currently have any definitive plans to enter into any of these transactions.

We have no plans to pay dividends on our common stock, and you may not receive funds without selling your common stock.

We have not declared or paid any cash dividends on our common stock, nor do we expect to pay any cash dividends on our common stock for the foreseeable future. We currently intend to retain any future earnings, if any, to finance our operations and growth and, potentially, for future stock repurchases and, therefore, we have no plans to pay cash dividends on our common stock. Any future determination to pay cash dividends on our common stock will be at the discretion of our board of directors and will be dependent on our earnings, financial condition, operating results, capital requirements, any contractual restrictions, and other factors that our board of directors deems relevant.

Accordingly, you may have to sell some or all of your common stock in order to generate cash from your investment in Mateon Therapeutics, Inc. You may not receive a gain on your investment when you sell our common stock and may lose the entire amount of your investment.

Risks Related To This Offering

We have broad discretion in the use of the proceeds of this offering and may apply the proceeds in ways with which you do not agree.

Substantially all of our net proceeds from this offering will be used, as determined by management in its sole discretion, to continue work toward development and regulatory approval of our product candidates, and for working capital and other general corporate purposes. Our management will have broad discretion over the use and investment of the net proceeds of this offering. The failure of our management to apply these funds effectively could harm our business. You will not have the opportunity, as part of your investment decision, to assess whether our proceeds are being used appropriately. Pending application of our proceeds, they may be placed in investments that do not produce income or that lose value.

There is no public market for the warrants to purchase common stock in this offering.

There is no established trading market for the warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any securities exchange. Without an active market, the liquidity of the warrants will be limited.

You may incur substantial dilution as a result of this offering and future equity issuances.

Based on our capitalization as of June 30, 2017, purchasers of our securities in this offering will incur immediate dilution. See “Dilution” at p. 21 for a more detailed discussion of the dilution you will incur in this offering.

In addition to this offering, subject to market conditions and other factors, it is likely that we will pursue additional financings in the future, as we continue to build our business. In future years, we will likely need to raise significant additional capital to finance our operations and to fund the development and regulatory approval of our product candidates. Accordingly, we may conduct substantial future offerings of equity or debt securities. The exercise of outstanding options and warrants and future equity issuances, including future public offerings or future private placements of equity securities, will result in dilution to investors. In addition, the market price of our common stock could fall as a result of resales of any of these shares of common stock due to an increased number of shares available for sale in the market.

The warrants may not have any value .

The warrants are exercisable at an exercise price of $ for a five-year term. In the event that our common stock price does not exceed the exercise price of the warrants during the period when the warrants are exercisable, the warrants may not have any value.

Holders of our warrants will have no rights as a common stockholder until they exercise their warrants.

Until you receive shares of our common stock as a result of exercising your warrants, you will have no rights with respect to our common stock. Upon exercising your warrants, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

Sales of our securities in this offering are limited to institutional investors; we have not applied to register the securities to be issued in this offering for sales to retail investors in any states.

We have not applied to register our securities to be issued in this offering for offers and sales to retail customers. Each state has its own securities laws, often called “blue sky” laws, which limit sales of securities to a state’s residents unless the securities are registered in that state or qualify for an exemption from registration and govern the reporting requirements for broker-dealers and stock brokers doing business directly or indirectly in the state. Before a security is sold in a state, there must be a registration in place to cover the transaction, or it must be exempt from registration. In connection with this offering, we will rely on exemptions provided for sales to institutional investors under the state Blue Sky laws. The definition of an “institutional investor” varies from state to state but generally includes financial institutions, broker-dealers, banks, insurance companies and other qualified entities. We expect that resales of the securities purchased in this offering will be exempt from state registration requirements pursuant to one or more exemptions. Specifically, under the National Securities Markets Improvement Act of 1996, states are pre-empted from regulating transactions in certain categories of securities that are designated as “covered securities.” The securities issued in this offering will be considered “covered securities” in connection with secondary market transactions by persons other than the issuer of the securities, an underwriter or a dealer because we file periodic and annual reports under the Exchange Act. Therefore, so long as we file periodic and annual reports, resales of the securities to be issued in this offering are exempt from state registration requirements. Each state retains jurisdiction to investigate and bring

enforcement actions with respect to fraud or deceit, or unlawful conduct by a broker or dealer, in connection with the sale of securities. If we were to cease being eligible for this exemption, it could have a material adverse effect on your ability to sell the securities purchased in this offering. For a complete discussion of the Blue Sky laws and registrations affecting this offering, please see the section titled “Plan of Distribution — State Blue Sky Information”.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains 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, that involve substantial risks and uncertainties. We generally identify forward-looking statements by terminology such as "may," "will," "should," "expect," "plan," "anticipate," "could," "would," "intend," "target," "aim," "project," "believe," "estimate," "predict," "potential," "seek," "indicate," or "continue" or the negative of these terms or other similar words, although not all forward-looking statements contain these words. Forward-looking statements include, but are not limited to, statements regarding our or our management's expectations, hopes, beliefs, intentions or strategies regarding the future, such as our estimates regarding anticipated operating losses, future performance, future revenues and projected expenses; our liquidity and our expectations regarding our needs for and ability to raise additional capital; our ability to continue as a going concern; our ability to select and capitalize on commercially desirable product opportunities as a result of limited financial resources; our ability to manage our expenses effectively and raise the funds needed to continue our business; our ability to retain the services of our current executive officers, directors and principal consultants; the competitive nature of our industry and the possibility that our products or product candidates may become obsolete; our ability to obtain and maintain regulatory approval of our existing products and any future products we may develop; the clinical development of and the process of commercializing CA4P, which is also known as combretastatin A4-phosphate, fosbretabulin or fosbretabulin tromethamine; the efficacy of the combination of CA4P with bevacizumab; the clinical development of and the process of commercializing OXi4503; the combination of OXi4503 with cytarabine; the initiation, timing, progress and results of our preclinical and clinical trials, research and development programs; regulatory and legislative developments in the United States and foreign countries; the timing, costs and other limitations involved in obtaining regulatory approval for any product; the further preclinical or clinical development and commercialization of our product candidates; our ability to obtain and maintain orphan drug exclusivity for some of our product candidates; the potential benefits of our product candidates over other therapies; our ability to enter into and maintain any collaboration with respect to product candidates; our ability to continue to develop or commercialize our products or product candidates in the event any license agreements in place with third parties expire or are terminated; the performance and conduct of third parties, including our third-party manufacturers and third party service providers used in our clinical trials; our ability to obtain and maintain intellectual property protection for our products and operate our business without infringing upon the intellectual property rights of others; the potential liability exposure related to our products and our insurance coverage for such exposure; the successful development of our sales and marketing capabilities; the size and growth of the potential markets for our products and our ability to serve those markets; the rate and degree of market acceptance of any future products; the volatility of the price of our common stock; the ability to achieve secondary trading of our stock in certain states; the dilutive effects of potential future equity issuances; our expectation that no dividends will be declared on our common stock in the foreseeable future; our ability to maintain an effective system of internal controls; the payment and reimbursement methods used by private or governmental third-party payers; our ability to retain adequate staffing levels; unfavorable global economic conditions; a failure of our internal computer systems or those of our contractors and consultants; potential misconduct or other improper activities by our employees, contractors or consultants; the ability of our business continuity and disaster recovery plans to protect us in the event of a natural disaster; and other factors discussed elsewhere in this prospectus or any document incorporated by reference herein or therein.

The forward-looking statements contained in this Prospectus are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, those factors described in the section titled "Risk Factors." Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary from those projected in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws. The section captioned "Risk Factors as well as other sections in this prospectus or incorporated by reference into this prospectus, discuss some of the factors that could contribute to these differences.

The forward-looking statements made in this prospectus relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events.

USE OF PROCEEDS

We estimate that we will receive up to approximately $5.4 million in net proceeds from the sale of our securities in this offering, based on an assumed offering price of $0.36 per share of common stock and associated warrant and assuming the sale of 16,666,666 shares of common stock or pre-funded warrants in this offering, and after deducting estimated placement agent fees and estimated offering expenses payable by us. This estimate excludes the proceeds, if any, from the exercise of common warrants in this offering.

We intend to use the net proceeds of this offering for working capital, research and development activities and general corporate purposes, including continuing our research and development efforts for our investigational drugs CA4P and OXi4503. The primary programs and activities to which we intend to devote the net proceeds of this offering are:

- the completion of the first part of our ongoing FOCUS Phase 2/3 clinical trial of CA4P seeking to demonstrate whether CA4P improves upon the current standard of care for platinum-resistant ovarian cancer;
- the completion of the fifth cohort of our phase 1b OX1222 study, in which OXi4503 is being used in combination with cytarabine, an FDA-approved drug for the treatment of acute myeloid leukemia and the design of a more advanced study of OXi4503 for AML and/or MDS; and
- the balance for general corporate purposes, such as general and administrative expenses, capital expenditures, earlier-stage research and development activities, working capital needs and the expansion and protection of our intellectual property.

Our management will have broad discretion in the application of the net proceeds, and investors will be relying on the judgment of our management regarding the application of the proceeds of this offering.

Pending specific utilization of the net proceeds described above, we intend to invest the net proceeds in United States government securities and other short term, investment grade, interest bearing securities.

A $0.05 increase or decrease in the assumed public offering price of $0.36 per share of common stock and associated warrant, the last reported sale price for our common stock as reported on the OTCQX Marketplace on July 31, 2017, would decrease or increase the number of shares of our common stock issued in this offering and issuable upon the exercise of warrants issued in this offering by approximately 2.0 million shares or 2.7 million shares, respectively.

Similarly, a one million share increase or decrease in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease the net proceeds to us by approximately $337,000, assuming the assumed combined public offering price of $0.36 per share and accompanying warrant remains the same, and after deducting estimated placement agent fees and expenses and estimated offering expenses payable by us.

CAPITALIZATION

The following table describes our capitalization and cash and cash equivalents as of June 30, 2017 on an actual basis and on an adjusted basis to reflect our assumed sale of shares of our common stock in this offering at an assumed offering price of $0.36 per share of common stock and associated warrant, assuming all pre-funded warrants are exercised, and after deducting the estimated placement agent fees and estimated offering expenses payable by us.

You should read this capitalization table together with the financial statements and related notes that are incorporated by reference into this prospectus, as well as "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the other financial information contained in our Annual Report on Form 10-K for the year ended December 31, 2016 and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2017 and incorporated by reference into this prospectus.

Capitalization

(in thousands)	June 30, 2017 (unaudited)	June 30, 2017 (as adjusted, unaudited)
Cash, cash equivalents and short-term investments	$ 5,004	$ 10,439
Stockholders' equity		
Preferred stock, $0.01 par value, 15,000 shares authorized, no shares issued or outstanding	—	
Common stock, $0.01 par value, 70,000 shares authorized 26,545 actual shares issued and outstanding, 43,212 as adjusted shares issued and outstanding	$ 265	$ 432
Additional paid-in capital	291,144	296,412
Accumulated deficit	(286,305)	(286,305)
Total stockholders' equity	$ 5,104	$ 10,539

The preceding table excludes 8,333,333 shares of common stock issuable upon the exercise of common warrants to be sold in this offering; 666,667 shares of common stock issuable upon the exercise of warrants to be issued to the placement agent in connection with this offering; 9,625,797 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2017, at a weighted average exercise price of $2.56 per share; 5,941,434 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2017, at a weighted average exercise price of $1.01 per share; 541,847 shares of common stock available for future issuance under the 2015 Plan; and 242,500 shares of common stock available for future issuance under the 2017 Plan.

DILUTION

Our tangible book value at June 30, 2017 was approximately $5,104,000, or $0.19 per share. After giving effect to the sale of 16,666,666 shares of common stock in this offering at an assumed offering price of $0.36 per share of common stock and associated warrant, which was the last reported sale price for our common stock on July 31, 2017, after deducting the estimated placement agent's fees and estimated expenses of this offering, our as adjusted net tangible book value would have been approximately $10,539,000, or $0.24 per share of common stock. Assuming the completion of this offering, this represents an immediate increase in as adjusted net tangible book value of $0.05 per share to our existing stockholders and an immediate dilution in the as adjusted net tangible book value of $0.12 per share to anyone who purchases our common stock in this offering. The following table illustrates this calculation on a per share basis:

Assumed public offering price per share and associated warrant		$0.36
Historical net tangible book value per share as of June 30, 2017	$0.19	
Increase in net tangible book value per share attributable to the offering	$0.05	
As adjusted net tangible book value per share after the offering		$0.24
Dilution per share to new investors		$0.12

The preceding table excludes 8,333,333 shares of common stock issuable upon the exercise of common warrants to be sold in this offering; 666,667 shares of common stock issuable upon the exercise of warrants to be issued to the placement agent in connection with this offering; 9,625,797 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2017, at a weighted average exercise price of $2.56 per share; 5,941,434 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2017, at a weighted average exercise price of $1.01 per share; 541,847 shares of common stock available for future issuance under the 2015 Plan; and 242,500 shares of common stock available for future issuance under the 2017 Plan.

PRICE RANGE OF OUR COMMON STOCK

Effective December 8, 2016, shares of our common stock began trading on the OTCQX Marketplace under the symbol "MATN". From June 20, 2016 to December 8, 2016, the Company's common stock was traded on The NASDAQ Capital Market under the symbol "MATN". Prior to June 20, 2016, the Company's common stock was traded on The NASDAQ Capital Market under the symbol "OXGN". The following table sets forth, for the periods indicated, the high and low sales prices or bid prices, as applicable, of our common stock, rounded to the nearest cent, on the OTCQX Marketplace and on The NASDAQ Capital Market, as applicable, as reported by each of the markets, for each quarterly period during the two most recent fiscal years. With respect to the periods in which shares of our common stock were traded on the OTCQX Marketplace, the prices set forth below represent inter-dealer quotations, without adjustment for retail mark-up, mark-down or commission, and may not represent the prices of actual transactions.

	High	Low
Fiscal Year 2017		
First Quarter	$0.79	$0.36
Second Quarter	$0.89	$0.28
Third Quarter (through August 1, 2017)	$0.42	$0.27
Fiscal Year 2016		
First Quarter	$0.89	$0.49
Second Quarter	$1.02	$0.52
Third Quarter	$0.80	$0.55
Fourth Quarter	$0.63	$0.27
Fiscal Year 2015		
First Quarter	$1.97	$1.34
Second Quarter	$1.68	$1.31
Third Quarter	$1.47	$0.87
Fourth Quarter	$1.09	$0.65

As of July 21, 2017, there were approximately 41 stockholders of record of our common stock. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

DIVIDEND POLICY

We currently intend to retain any future earnings to finance the growth and development of our business. Therefore, we do not anticipate declaring or paying any cash dividends in the foreseeable future. Any future determination as to the declaration and payment of dividends, if any, will be at the discretion of our Board of Directors and will depend on then existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our Board of Directors may deem relevant.

MANAGEMENT

Directors and Executive Officers

The following table sets forth certain information about our directors and executive officers as of July 21, 2017.

Name	Age	Position
David J. Chaplin, Ph.D.	61	Director and Chief Scientific Officer
Simon C. Pedder, Ph.D.	56	Director
Donald R. Reynolds	54	Director
Bobby W. Sandage, Jr., Ph.D.	63	Director
William D. Schwieterman, M.D.	59	Chairman of the Board of Directors, President and Chief Executive Officer
Matthew M. Loar	54	Chief Financial Officer

David J. Chaplin, Ph.D. Dr. Chaplin has served as of Chief Scientific Officer since May 2015. Prior to serving as our Chief Scientific Officer, Dr. Chaplin served as our President and Chief Executive Officer from May 2014 until May 2015, and Dr. Chaplin previously served as our Head of Research and Development from July 2000 until August 2011. From May 2014 to December 2016, Dr. Chaplin provided consulting services to Mateon through Aston Biopharma Ltd., a UK-based entity which is controlled by Dr. Chaplin. From 1999 to 2000, Dr. Chaplin served as Vice President of Oncology at Aventis Pharma in Paris, where he was in charge of drug development from preclinical through phase 1 trials. Prior to the merger of Rhone Poulenc Rorer ("RPR") with Hoechst Marion Roussell, Dr. Chaplin was Senior Director of Oncology at RPR from 1998 to 1999. From 1992 to 1998, Dr. Chaplin headed up the Cancer Research Campaign's ("CRC") Tumor Microcirculation Group, based at the Gray Laboratory Cancer Research Trust, Mount Vernon Hospital, London. During this time, he was also a member of the CRC Phase I/II clinical trials committee. Dr. Chaplin also served as Section Head of Cancer Biology at Xenova in the U.K. from 1990 to 1992, and held a senior staff appointment at the British Columbia Cancer Research Centre from 1982 to 1990. Dr. Chaplin has a B.Sc. in chemistry from the University of Essex, a M.Sc. in pharmacology from the University of Southampton, and completed his Ph.D. in tumor biology at the University of London. Since January 2012, Dr. Chaplin has been a director of Smart Matrix Ltd, a privately held company based in the UK, which develops treatments for wound healing. Since July 2012, Dr. Chaplin has also been a director of PHusis Therapeutics, Inc., a privately held biopharmaceutical company. Since July 2013, Dr. Chaplin has been a Director of Aston Biopharma, a private UK-based company that provides Scientific Consulting Services. Dr. Chaplin was also appointed as a director of Fast Biopharma in June 2016. Fast Biopharma is a private company based in the UK and is involved in the generation of antibody-based therapeutics.

Simon C. Pedder, Ph.D. Dr. Pedder has been a member of our Board of Directors since March 2016. Dr. Pedder currently serves as the Vice President of Corporate Strategy and Business Development of Athenix, Inc., a private global specialty oncology pharmaceutical company. From April 2014 through June 2015, Dr. Pedder served as the President and Chief Executive Officer of Cellectar Biosciences, Inc., a biopharmaceutical company developing compounds for the treatment, diagnosis and imaging of cancer, and served as Cellectar's Acting Chief Executive Officer from October 2013 until April 2014. Dr. Pedder also served as a member of the board of directors of Cellectar from October 2013 until June 2015. From May 2004 through July 2012, Dr. Pedder served as President, Chief Executive Officer and as a director of Chelsea Therapeutics, Inc., a public development stage biopharmaceutical company. Dr. Pedder has a Bachelor of Environmental Studies from the University of Waterloo, a Master of Science in Toxicology from Concordia University and a Ph.D. in Pharmacology from the Medical College at the University of Saskatchewan College of Medicine. Dr. Pedder currently serves on the board of directors of Eboo Pharmaceuticals, Inc., a private development-stage pharmaceutical company, Ballantyne Therapeutics, Inc., a private pharmaceutical development company, and Atlantic Research Group, a private contract research organization. Dr. Pedder also served as a member of the board of directors of Cellectar from October 2013 until June 2015.

Donald R. Reynolds Mr. Reynolds has been a member of our Board of Directors since October 2016. Mr. Reynolds is a practicing attorney and partner at the law firm of Wyrick Robbins Yates & Ponton LLP with experience in the areas of capital markets, securities law, mergers & acquisitions, venture capital and general corporate law. Mr. Reynolds also currently teaches Securities Regulation at Campbell University's law school and guest lectures on corporate governance at the University of North Carolina Chapel Hill's Kenan-Flagler Business School. Since Mr. Reynolds's elevation to partner at the law firm of Wyrick Robbins Yates & Ponton LLP in 1996, he has participated in a variety of the firm's internal committees, including the firm's Executive Committee, Strategic Planning Committee, Nominating Committee and Compensation Committee. Mr. Reynolds received his B.A. from Whitman College and his J.D. from New York University School of Law. He is currently licensed to practice law in California and North Carolina. Mr. Reynolds currently serves as a member of the board of directors of Atlantic Research Group, Inc., a private clinical research organization, and as Chair of the board of directors of USA Taekwondo, the non-profit national governing body for the sport.

Bobby W. Sandage, Jr., Ph.D . Dr. Sandage has been a member of our Board of Directors since October 2016. Dr. Sandage currently serves as the president and chief executive officer of Euclises Pharmaceuticals, Inc., a private drug discovery and development company advancing cyclooxygenase-2 (COX-2) inhibitors for cancer therapy. Since August of 2016, he has served as a general partner of Cultivation Capital, a venture capital firm specializing in investments in private technology and life sciences companies. Dr. Sandage is currently a member of the board of directors of Immunophotonics, Inc., a private cancer vaccine development company, EDIS Solutions, LLC, a private healthcare information technology company, and Euclises Pharmaceuticals, Inc.

William D. Schwieterman, M.D. Since May 2015, Dr. Schwieterman has served as President and Chief Executive Officer of Mateon. Dr. Schwieterman has also been an independent consultant to biotech and pharmaceutical companies, including to Mateon, specializing in clinical development since July 2002. Dr. Schwieterman is a board-certified internist and a rheumatologist. Dr. Schwieterman was previously a part-time employee of Perceptive Advisors, LLC, a hedge fund based in New York, NY. From 2009 to 2014, Dr. Schwieterman was the Chief Medical Officer of Chelsea Therapeutics, Inc., a publicly traded biopharmaceutical development company, where he led the Chelsea Therapeutics clinical development team toward the approval of droxidopa for the treatment of symptoms of Parkinson's disease and other neurogenerative diseases. Dr. Schwieterman was formerly Chief of the Medicine Branch and Chief of the Immunology and Infectious Disease Branch in the Division of Clinical Trials at the Food and Drug Administration (the "FDA"). In these capacities and others, Dr. Schwieterman spent 10 years at the FDA in the Center for Biologics overseeing a wide range of clinical development plans for a large number of different types of molecules. Dr. Schwieterman holds a B.S. and M.D. from the University of Cincinnati. Dr. Schwieterman does not currently serve, and has not served in the past five years, as a member of the board of directors of another reporting company or of any registered investment company.

Matthew M. Loar Mr. Loar was appointed as our Chief Financial Officer in July 2015. Mr. Loar was previously Chief Financial Officer of KineMed, Inc., a privately held biotechnology company, from January 2014 to July 2015. From January 2010 to January 2014, Mr. Loar was an independent financial consultant to companies in the biopharmaceutical industry. While consulting, he also served as acting Chief Executive Officer and Chief Financial Officer of Neurobiological Technologies, Inc. (NTI), a publicly traded pharmaceutical company, beginning in February 2010 and currently continuing, and as Chief Financial Officer of Virolab, Inc., a biotechnology company, from May 2011 to August 2012. Previously, he was Chief Financial Officer of NTI from April 2008 to December 2009. Earlier in his career, Mr. Loar was Chief Financial Officer of Osteologix, Inc., a publicly traded pharmaceutical company, from 2006 to 2008, and of Genelabs Technologies, Inc., a publicly traded biopharmaceutical and diagnostics company, from 1995 to 2006. Mr. Loar currently serves on the board of directors of NTI. Mr. Loar received a B.A. in Legal Studies from the University of California, Berkeley and is a Certified Public Accountant (inactive) in California.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following tables set forth certain information with respect to the beneficial ownership of our common stock as of July 21, 2017, for (a) our named executive officers, (b) our directors, (c) all of our current directors and executive officers as a group and (d) each stockholder known by us to own beneficially more than 5% of our common stock. Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and includes voting or investment power with respect to the securities. We deem shares of common stock that may be acquired by an individual or group within 60 days of July 21, 2017 pursuant to the exercise of options or warrants to be outstanding for the purpose of computing the percentage ownership of such individual or group, but such shares are not deemed to be outstanding for the purpose of computing the percentage ownership of any other person shown in the tables. Except as indicated in footnotes to these tables, we believe that the stockholders named in these tables have sole voting and investment power with respect to all shares of common stock shown to be beneficially owned by them based on information provided to us by these stockholders. Ownership determinations are based on 26,544,934 shares of common stock outstanding on July 21, 2017. Unless otherwise indicated, the address of each stockholder is c/o Mateon Therapeutics, Inc., 701 Gateway Boulevard, Suite 210, South San Francisco, CA 94080.

Name of Beneficial Owner	Number of Shares of Mateon Common Stock Beneficially Owned and Nature of Ownership		Percent of Class	Percent of Class as Adjusted for this Offering
Directors and Named Executive Officers				
William D. Schwieterman, M.D.	471,617	(1)	1.7%	1.1%
David J. Chaplin, Ph.D.	466,736	(2)	1.7%	1.1%
Matthew M. Loar	279,426	(3)	1.0%	*
Simon C. Pedder, Ph.D.	138,650	(4)	*	*
Donald R. Reynolds	67,670	(5)	*	*
Bobby W. Sandage, Jr., Ph.D.	37,670	(6)	*	*
All current directors and executive officers as a group (6 persons)	1,461,769	(7)	5.2%	3.3%

* Less than 1%.

(1) Includes 470,870 shares Dr. Schwieterman has the right to acquire upon the exercise of options.

(2) Includes 465,730 shares Dr. Chaplin has the right to acquire upon the exercise of options.

(3) Includes 229,426 shares Mr. Loar has the right to acquire upon the exercise of options.

(4) Represents shares Dr. Pedder has the right to acquire upon the exercise of options.

(5) Includes 37,670 shares Mr. Reynolds has the right to acquire upon the exercise of options.

(6) Represents shares Dr. Sandage has the right to acquire upon the exercise of options.

(7) Includes 1,380,016 shares that the current directors and executive officers have the right to acquire upon the exercise of options.

The determination that there were no other persons, entities or groups known to us to beneficially own more than 5% of our outstanding common stock was based on a review of all statements filed with respect to us since the beginning of the past fiscal year with the Securities and Exchange Commission pursuant to Section 13(d) or 13(g) of the Exchange Act.

DESCRIPTION OF CAPITAL STOCK

The following description of our securities is intended as a summary only and is qualified in its entirety by reference to our amended and restated certificate of incorporation and amended and restated by-laws, which are filed as exhibits to the registration statement of which the prospectus forms a part, and to the applicable provisions of the Delaware General Corporation Law. We refer in this section to our amended and restated certificate of incorporation as our certificate of incorporation, and we refer to our amended and restated by-laws as our by-laws.

Our authorized capital stock consists of 70,000,000 shares of common stock, $0.01 par value per share, and 15,000,000 shares of preferred stock, par value $0.01 per share, in one or more series. As of July 21, 2017, we had outstanding 26,544,934 shares of our common stock. At that date, we also had an aggregate of 5,670,288 shares of common stock reserved for issuance upon exercise of outstanding stock options granted under our stock incentive plans, an aggregate of 9,625,797 shares of common stock reserved for issuance upon the exercise of outstanding warrants to purchase common stock, 609,191 shares of common stock available for issuance under the 2015 Plan and 446,302 shares of common stock available for issuance under the 2017 Plan.

Common Stock

Each holder of record of our common stock is entitled to one vote for each outstanding share of our common stock owned by that stockholder on every matter properly submitted to the stockholders for their vote. Holders of common stock are entitled to any dividend declared by our board of directors out of funds legally available for that purpose. Holders of common stock are entitled to receive, on a pro rata basis, all our remaining assets available for distribution to stockholders in the event of our liquidation, dissolution or winding up. Holders of common stock do not have any preemptive right to become subscribers or purchasers of additional shares of any class of our capital stock.

Preferred Stock

Our board of directors may, without further action by our stockholders, from time to time, direct the issuance of shares of preferred stock in series and may, at the time of issuance, determine the rights, preferences and limitations of each series, including voting rights, dividend rights and redemption and liquidation preferences. Satisfaction of any dividend preferences of outstanding shares of preferred stock would reduce the amount of funds available for the payment of dividends on shares of our common stock. Holders of shares of preferred stock may be entitled to receive a preference payment in the event of any liquidation, dissolution or winding-up of our company before any payment is made to the holders of shares of our common stock. In some circumstances, the issuance of shares of preferred stock may render more difficult or tend to discourage a merger, tender offer or proxy contest, the assumption of control by a holder of a large block of our securities or the removal of incumbent management. Upon the affirmative vote of our board of directors, without stockholder approval, we may issue shares of preferred stock with conversion rights which could adversely affect the holders of shares of our common stock.

Certain Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval. We may issue these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital or facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved common stock and preferred stock may enable our Board of Directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, if we issue preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation.

Delaware Law and Certificate of Incorporation and By-laws Provisions

The provisions of Delaware law and of our restated certificate of incorporation, as amended, and amended and restated by-laws discussed below could discourage or make it more difficult to accomplish a proxy contest or other change in our management or the acquisition of control by a holder of a substantial amount of our voting stock. It is possible that these provisions could make it more difficult to accomplish, or could deter, transactions that stockholders may otherwise consider to be in their best interests or the best interests of Mateon.

Delaware Statutory Business Combinations Provision.

In general, Section 203 of the Delaware General Corporation Law prohibits a publicly-held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. For purposes of this Section 203, a “business combination” is defined broadly to include a merger, asset sale or other transaction resulting in a financial benefit to the interested stockholder, and, subject to certain exceptions, an “interested stockholder” is a person who, together with his or her affiliates and associates, owns (or within the prior three years, did own) 15% or more of the corporation’s voting stock.

Special Meetings of Stockholders.

Special meetings of the stockholders may be called by the chairman of our board of directors, the president, or the entire board of directors pursuant to a resolution adopted by a majority of directors present at a meeting at which a quorum is present. The president or secretary shall also call special meetings upon the written request of not less than 10% in interest of the stockholders entitled to vote at the meeting.

Liability Limitations and Indemnification

The Delaware General Corporation Law authorizes corporations to limit or eliminate, subject to certain conditions, the personal liability of directors to corporations and their stockholders for monetary damages for breach of their fiduciary duties. Our restated certificate of incorporation limits the liability of our directors to the fullest extent permitted by Delaware law.

We have obtained director and officer liability insurance to cover liabilities our directors and officers may occur in connection with their services to us, including matters arising under the Securities Act. Our restated certificate of incorporation and restated by-laws also provide that we will indemnify any of our directors and officers who, by reason of the fact that he or she is one of our officers or directors, is involved in a legal proceeding of any nature. We will repay certain expenses incurred by a director or officer in connection with any civil or criminal action or proceeding, specifically including actions by us or in our name (derivative suits). These indemnifiable expenses include, to the maximum extent permitted by law, attorney's fees, judgments, civil or criminal fines, settlement amounts and other expenses customarily incurred in connection with legal proceedings. A director or officer will not receive indemnification if he or she is found not to have acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interest. In addition, we have entered into agreements to indemnify our directors and officers. These agreements, among other things, will indemnify and advance expenses to our directors and officers for certain expenses, including attorney's fees, judgments, fines and settlement amounts incurred by any such person in any action or proceeding, including any action by us arising out of such person's services as our director or officer, or any other company or enterprise to which the person provides services at our request. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is therefore unenforceable.

Current Trading Symbol

Our common stock is quoted for trading on the OTCQX Marketplace under the symbol "MATN."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering (i) 16,666,666 shares of our common stock or pre-funded warrants and (ii) common warrants to purchase up to an aggregate of 8,333,333 shares of our common stock. Each share of common stock or pre-funded warrant is being sold together with a common warrant to purchase one half a share of common stock. The shares of common stock or pre-funded warrants and accompanying common warrants will be issued separately. We are also registering the shares of common stock issuable from time to time upon exercise of the pre-funded warrants and common warrants offered hereby.

Common Stock

The material terms and provisions of our common stock and each other class of our securities which qualifies or limits our common stock are described under the caption "Description of Capital Stock" in this prospectus.

Pre-Funded Warrants

The following summary of certain terms and provisions of pre-funded warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the pre-funded warrant, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

Duration and Exercise Price. Each pre-funded warrant offered hereby will have an initial exercise price per share equal to $0.01. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The pre-funded warrants will be issued separately from the accompanying common warrants, and may be transferred separately immediately thereafter.

Exercisability. The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the pre-funded warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's pre-funded warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. Purchasers of pre-funded warrants in this offering may also elect prior to the issuance of the pre-funded warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock. No fractional shares of common stock will be issued in connection with the exercise of a pre-funded warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

Cashless Exercise. If, at the time a holder exercises its pre-funded warrants, a registration statement registering the issuance of the shares of common stock underlying the pre-funded warrants under the Securities Act is not then effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the pre-funded warrants.

Transferability. Subject to applicable laws, a pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

Trading Market. There is no trading market available for the pre-funded warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder . Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their pre-funded warrants.

Common Warrants

The following summary of certain terms and provisions of common warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the common warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of common warrant for a complete description of the terms and conditions of the common warrants.

Duration and Exercise Price. Each common warrant offered hereby will have an initial exercise price per share equal to $. The common warrants will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The common warrants

will be issued separately from the common stock, and may be transferred separately immediately thereafter. A common warrant to purchase one half a share of our common stock will be issued for every one share of common stock or pre-funded warrant purchased in this offering.

Exercisability . The common warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the common warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's common warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the common warrants. No fractional shares of common stock will be issued in connection with the exercise of a common warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

Cashless Exercise . If, at the time a holder exercises its common warrants, a registration statement registering the issuance of the shares of common stock underlying the common warrants under the Securities Act is not then effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the common warrants.

Transferability . Subject to applicable laws, a common warrant may be transferred at the option of the holder upon surrender of the common warrant to us together with the appropriate instruments of transfer.

Exchange Listing . We do not intend to list the common warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder . Except as otherwise provided in the common warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the common warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their common warrants.

PLAN OF DISTRIBUTION

Pursuant to an engagement agreement, we have engaged H.C. Wainwright & Co., LLC, or the Placement Agent, to act as our exclusive placement agent in connection with this offering of our securities pursuant to this prospectus on a reasonable best efforts basis. The terms of this offering were determined by us and the Placement Agent based on market conditions at the time of pricing. The engagement agreement does not give rise to any commitment by the Placement Agent to purchase any of our securities, and the Placement Agent will have no authority to bind us by virtue of the engagement agreement. The Placement Agent may engage sub-agents or selected dealers to assist with the offering.

Only certain institutional investors purchasing the securities offered hereby will execute a securities purchase agreement with us, providing such investors with certain representations, warranties and covenants from us, which representations, warranties and covenants will not be available to other investors who will not execute a securities purchase agreement in connection with the purchase of the securities offered pursuant to this prospectus. Therefore, those investors shall rely solely on this prospectus in connection with the purchase of securities in the offering.

The Placement Agent is not purchasing or selling any of the securities offered by us under this prospectus, nor is it required to arrange the purchase or sale of any specific number or dollar amount of securities. The Placement Agent has agreed to use reasonable best efforts to arrange for the sale of the securities. There is no required minimum number of securities that must be sold as a condition to completion of this offering. Further, the Placement Agent does not guarantee that it will be able to raise new capital in any prospective offering.

The securities purchase agreement we entered with the investors provides that the obligations of the investors of the securities are subject to certain conditions precedent. We will deliver the securities being issued to the investors upon receipt of investor funds for the purchase of the securities offered pursuant to this prospectus. We expect to deliver the securities being offered pursuant to this prospectus on or about , 2017.

The Placement Agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by the Placement Agent and any profit realized on the resale of the shares of common stock sold by the Placement Agent while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the Placement Agent would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares of common stock by the Placement Agent acting as principal. Under these rules and regulations, the Placement Agent:

- may not engage in any stabilization activity in connection with our securities; and
- may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

Commissions and Expenses

We have agreed to pay the Placement Agent a total cash fee equal to 6.5% of the gross proceeds of this offering (which may be reduced under certain circumstances). We will also pay the Placement Agent a reimbursement for non-accountable expenses of $25,000 and a reimbursement for the Placement Agent's legal fees and expenses in the amount of up to $100,000. This fee will be distributed among the Placement Agent and any selected-dealers that it has retained to act on their behalf in connection with this offering. We estimate the total offering expenses of this offering that will be payable by us, excluding the placement agent fees and expenses, will be approximately $175,000.

Placement Agent Warrants

In addition, we have agreed to issue to the Placement Agent warrants to purchase up to 666,667 shares of common stock (which represents 4.0% of the aggregate number of shares of common stock and pre-funded warrants sold in this offering, including the number of shares underlying the pre-funded warrants being offered hereby) at an exercise price of $ per share (representing 125% of the public offering price for the shares of common stock and related warrant to be sold in this offering), exercisable for 5 years from the date of the effectiveness of this offering. The placement agent warrants will have substantially the same terms as the warrants being sold to the investors in this offering. Pursuant to FINRA Rule 5110(g), the placement agent warrants and any shares of common stock issued upon exercise of the placement agent warrants shall not be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of this offering, except the transfer of any security: (i) by operation of law or by reason of our reorganization; (ii) to any FINRA member firm participating in the offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction set forth above for the remainder of the time period; (iii) if the aggregate amount of our securities held by the Placement Agent or related persons do not exceed 1% of the securities being offered; (iv) that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund and the participating members in the aggregate do not own more than 10% of the equity in the fund; or (v) the exercise or conversion of any security, if all securities remain subject to the lock-up restriction set forth above for the remainder of the time period.

Right of First Refusal

We have also agreed to give the Placement Agent, subject to the completion of this offering, certain rights of first refusal for a period of six months with respect to any further capital raising transactions undertaken by us and a tail fee equal to the cash and warrant compensation in this offering, if any investor who was contacted by the Placement Agent provides us with further capital during such six-month period following the expiration or termination of our engagement with the Placement Agent.

Lock-up Agreements

Our executive officers and directors have agreed, subject to certain exceptions, not to offer, sell, agree to sell, directly or indirectly, or otherwise dispose of shares of common stock or warrants or any other securities convertible into or exchangeable for shares of common stock except for the shares of common stock offered in this offering without the prior written consent of the representative for a period of 90 days after the consummation of this offering. The Company has agreed, subject to certain exceptions, not to issue (or to agree to issue) additional shares of its common stock or certain securities convertible or exercisable into shares of its common stock for a period of 90 days after the consummation of this offering.

Indemnification

We have agreed to indemnify the Placement Agent and specified other persons against certain liabilities relating to or arising out of the Placement Agent's activities under the placement agency agreement and to contribute to payments that the Placement Agent may be required to make in respect of such liabilities.

Determination of offering price

The offering price of the securities we are offering was negotiated between us and the investors, in consultation with the Placement Agent based on the trading of our shares of common stock prior to the offering, among other things. Other factors considered in determining the offering price of the shares of common stock we are offering include the history and prospects of the company, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

Listing

Our common stock is traded on the OTCQX Marketplace under the symbol "MATN."

Other Relationships

From time to time, the Placement Agent has provided, and may provide in the future, various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which they have received and may continue to receive customary fees and commissions. However, except as disclosed in this prospectus, we have no present arrangements with the Placement Agent for any further services.

State Blue Sky Information

We have not applied to register the securities to be issued in this offering for offers and sales to retail customers. In connection with this offering, we will rely on exemptions from registration for sales of securities in this offering solely to institutional investors pursuant to an exemption provided for sales to these investors under the state Blue Sky laws. The definition of an "institutional investor" varies from state to state but generally includes financial institutions, broker-dealers, banks, insurance companies and other qualified entities.

The National Securities Markets Improvement Act of 1996, which is a federal statute, pre-empts the states from regulating transactions in certain securities, which are referred to as "covered securities." The resale of shares of common stock issued or issuable upon the exercise of warrants issuable in this offering by persons other than underwriters or dealers is exempt from state registration requirements under the National Securities Markets Improvement Act because we are required to file periodic and annual reports under the Securities Exchange Act of 1934. However, states are permitted to require notice filings and collect fees with regard to these transactions and a state may suspend the offer and sale of securities within such state if any such required filing is not made or fee is not paid. As of the date of this prospectus, Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming either do not presently require any notice filings or fee payments or have not yet issued rules or regulations indicating whether notice filings or fee payments will be required. The District of Columbia, Illinois, Maryland, Montana, New Hampshire, North Dakota, Oregon, Puerto Rico, Rhode Island, Tennessee, Texas and Vermont currently permit the resale of the securities, if we have registered the common stock in the state or the proper notice filings and fees have been submitted. As of the date of this prospectus, we have not determined in which, if any, of these states we will submit the required notice filings or pay the required fee. Additionally, if any of the states that has not yet adopted a statute relating to the National Securities Markets Improvement Act adopts such a statute in the future requiring a filing or fee or if any state amends its existing statutes with respect to its requirements, we would need to comply with those new requirements in order for our common stock to continue to be eligible for resale in those jurisdictions pursuant to the exemption provided by the National Securities Markets Improvement Act.

Aside from the exemption from registration provided by the National Securities Markets Improvement Act, the shares of common stock issued in this offering or issuable upon warrants issued in this offering may be eligible for sale on a secondary market basis in various states based on the availability of other applicable exemptions from state registration requirements, in certain instances subject to waiting periods, notice filings or fee payments.

Selling Restrictions outside the United States

This prospectus does not constitute an offer to sell to, or a solicitation of an offer to buy from, anyone in any country or jurisdiction (i) in which such an offer or solicitation is not authorized, (ii) in which any person making such offer or solicitation is not qualified to do so or (iii) in which any such offer or solicitation would otherwise be unlawful. No action has been taken that would, or is intended to, permit a public offer of the securities or possession or distribution of this prospectus or any other offering or publicity material relating to the securities in any country or jurisdiction (other than the United States) where any such action for that purpose is required. Accordingly, the Placement Agent has undertaken that it will not, directly or indirectly, offer or sell any shares of common stock or have in its possession, distribute or publish any prospectus, form of application, advertisement or other document or information in any country or jurisdiction except under circumstances that will, to the best of its knowledge and belief, result in compliance with any applicable laws and regulations and all offers and sales of securities by it will be made on the same terms.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus may be distributed only to, and is directed only at, investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds; provident funds; insurance companies; banks; portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange Ltd., underwriters, each purchasing for their own account; venture capital funds; entities with equity in excess of NIS 50 million and "qualified individuals," each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors. Qualified investors shall be required to submit written confirmation that they fall within the scope of the Addendum.

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts. Ellenoff Grossman & Schole LLP will pass upon certain legal matters for the placement agent.

EXPERTS

OUM & CO. LLP, independent registered public accounting firm, has audited our financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2016, as set forth in their report (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 2 to the financial statements), which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on OUM & CO. LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the common stock. This prospectus does not contain all of the information included in the registration statement. For further information pertaining to us and our common stock and the common stock underlying the warrants, you should refer to the registration statement and the exhibits and schedules filed with the registration statement. Whenever we make reference in this prospectus to any of our contracts, agreements or other documents, the references are not necessarily complete, and you should refer to the exhibits attached to the registration statement for copies of the actual contract, agreement or other document.

We are subject to the informational requirements of the Securities Exchange Act and file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read our SEC filings, including the registration statement, over the Internet at the SEC's website at www.sec.gov. You may also read and copy any document we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C., 20549. You may also obtain copies of the documents at prescribed rates by writing to the Public Reference Room of the SEC at 100 F Street, N.E., Washington, D.C., 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facility.

INCORPORATION OF DOCUMENTS BY REFERENCE

We have elected to incorporate by reference certain information in this prospectus pursuant to General Instruction VII of Form S-1 in accordance with the Securities Exchange Act of 1934. The description of our common stock contained in our Registration Statement on Form 8-A filed on June 24, 1993 (File No. 000-21990) pursuant to Section 12(g) of the Exchange Act, which incorporates by reference the description of the shares of our common stock contained in our Registration Statement on Form S-1 (File No. 33-64968) filed on June 24, 1993 and declared effective by the SEC on August 25, 1993, and any amendment or report filed with the SEC for purposes of updating such description is hereby incorporated by reference.

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus and information we file later with the SEC will automatically update and supersede this information. We incorporate by reference into this prospectus the documents listed below and any future filings made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (1) after the date of this prospectus and prior to the time that we sell all of the securities offered by this prospectus or the earlier termination of the offering, and (2) after the date of the initial registration statement of which this prospectus forms a part and prior to the effectiveness of the registration statement (except in each case the information contained in such documents to the extent "furnished" and not "filed"). The documents we are incorporating by reference as of their respective dates of filing are:

- Our Current Report on Form 8-K filed on January 13, 2017 (File No. 000-21990);
- Our Current Report on Form 8-K filed on March 15, 2017 (File No. 000-21990);
- Our Annual Report on Form 10-K filed on March 30, 2017 (File No. 000-21990);
- Our Current Report on Form 8-K filed on April 18, 2017 (File No. 000-21990);
- Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 26, 2017 (other than the portions thereof which are furnished and not filed)(File No. 000-21990);
- Our Quarterly Report on Form 10-Q filed on May 8, 2017 (File No. 000-21990);
- Our Current Report on Form 8-K filed on June 7, 2017 (File No: 000-21990);
- Our Current Report on Form 8-K filed on June 9, 2017 (File No: 000-21990);
- Our Current Report on Form 8-K filed on June 12, 2017 (File No: 000-21990);
- Our Current Report on Form 8-K filed on August 1, 2017 (File No: 000-21990);
- Our Quarterly Report on Form 10-Q filed on August 2, 2017 (File No: 000-21990); and

- The description of our common stock contained in our Registration Statement on Form 8-A filed on June 24, 1993 (File No. 0-21990) pursuant to Section 12(g) of the Exchange Act, which incorporates by reference the description of the shares of our common stock contained in our Registration Statement on Form S-1 (File No. 33-64968) filed on June 24, 1993 and declared effective by the SEC on August 25, 1993, and any amendment or report filed with the SEC for purposes of updating such description.

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

These filings, our other annual, quarterly, and current reports, our proxy statements, and our other SEC filings may be examined, and copies may be obtained, at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling the SEC at (800) SEC-0330. Our SEC filings are also available to the public on the SEC's website at www.sec.gov.

Our internet address is www.mateon.com and the investor relations section of our website is located at http://investor.mateon.com/index.cfm. We make available free of charge, on or through the investor relations section of our website, Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not part of this prospectus.

We hereby undertake to provide without charge to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request of any such person, a copy of any and all of the information that has been incorporated by reference in this prospectus, but has not been delivered with the prospectus. Requests for such copies should be sent to us at the following address:

Mateon Therapeutics, Inc.
701 Gateway Boulevard, Suite 210
South San Francisco, California 94080
Attention: Investor Relations
(650) 635-7000

Table of Contents

Mateon Therapeutics, Inc.

16,666,666 Shares of Common Stock
Pre-funded Warrants to Purchase Shares of Common Stock
Common Warrants to Purchase 8,333,333 Shares of Common Stock

PROSPECTUS

Rodman & Renshaw
a unit of H.C. Wainwright & Co.

, 2017

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than the placement agent fees, payable by us in connection with this offering. All expenses are estimated except the fees payable to the SEC and FINRA.

	Amount
SEC registration fee	$ 1,392
FINRA fee	$ 1,895
Blue sky fees and expenses	$ 10,000
Legal fees and expenses	$ 125,000
Accounting fees and expenses	$ 15,000
Printing expenses	$ 15,000
Transfer agent fees	$ 2,000
Miscellaneous	$ 4,713
Total	$ 175,000

Item 14. Indemnification of Directors and Officers

Subsection (a) of Section 145 of the Delaware General Corporation Law empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that he is or was a director, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he 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, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

Subsection (b) of Section 145 of the Delaware General Corporation Law empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if he 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 except that no indemnification may be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all 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.

Section 145 of the Delaware General Corporation Law further provides that to the extent a director, officer, employee or agent of a corporation has been successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in subsections (a) and (b) or in the defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him in connection therewith; that indemnification or advancement of expenses provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and empowers the corporation to purchase and maintain insurance on behalf of a director, officer, employee or agent of the corporation against any liability asserted against him or incurred by him in any such capacity or arising out of his status as such whether or not the corporation would have the power to indemnify him against such liabilities under Section 145.

Reference is also made to Section 102(b)(7) of the Delaware General Corporation Law, which enables a corporation in its certificate of incorporation to eliminate or limit the personal liability of a director for monetary damages for violations of a director's fiduciary duty, 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) under Section 174 of the Delaware General Corporation Law (providing for liability of directors for unlawful payment of dividends or unlawful stock purchases or redemptions) or (iv) for any transaction from which the director derived an improper personal benefit.

Article Ninth of our restated certificate of incorporation, as amended, provides that, to the fullest extent permitted by the DGCL, a director 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) under Section 174 of the Delaware General Corporation Law, or (iv) for any transaction from which the director derived an improper personal benefit.

Article VII of our amended and restated by-laws provides that we shall, to the fullest extent permitted by the Delaware General Corporation Law, indemnify our directors and may, if authorized by our board of directors, indemnify our officers, employees and agents and any and all persons whom we shall have power to indemnify against any and all expenses, liabilities or other matters.

We have entered into agreements to indemnify our directors and officers. These agreements, among other things, will indemnify and advance expenses to our directors and officers for certain expenses, including attorney's fees, judgments, fines and settlement amounts incurred by any such person in any action or proceeding, including any action by us arising out of such person's services as our director or officer, or any other company or enterprise to which the person provides services at our request.

Item 15. Recent Sales of Unregistered Securities

None.

Item 16. Exhibits and Financial Statement Schedules

The exhibits filed with this registration statement are set forth on the exhibit index following the signature page and are incorporated by reference in their entirety into this item.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (a)(1)(i), (ii), and (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 Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) that are incorporated by reference in 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 of the registrant under the Securities Act to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

The undersigned registrant hereby undertakes to deliver or cause to be delivered with the prospectus, to each person to whom the prospectus is sent or given, the latest annual report, to security holders that is incorporated by reference in the prospectus and furnished pursuant to and meeting the requirements of Rule 14a-3 or Rule 14c-3 under the Securities Exchange Act of 1934; and, where interim financial information required to be presented by Article 3 of Regulation S-X is not set forth in the prospectus, to deliver, or cause to be delivered to each person to whom the prospectus is sent or given, the latest quarterly report that is specifically incorporated by reference in the prospectus to provide such interim financial information.

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 Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of these securities at that time shall be deemed to be the initial bona fide offering.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South San Francisco, State of California, on August 2, 2017.

MATEON THERAPEUTICS, INC.

By: /s/ William D. Schwieterman
Name: William D. Schwieterman, M.D.
Title: Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this registration statement has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ William D. Schwieterman William D. Schwieterman	President, Chief Executive Officer and Chairman of the Board and Director (Principal executive officer)	August 2, 2017
/s/ Matthew M. Loar Matthew M. Loar	Chief Financial Officer (Principal financial and accounting officer)	August 2, 2017
/s/ David J. Chaplin* David J. Chaplin	Director	August 2, 2017
/s/ Simon C. Pedder* Simon C. Pedder	Director	August 2, 2017
/s/ Donald R. Reynolds* Donald R. Reynolds	Director	August 2, 2017
/s/ Bobby W. Sandage, Jr.* Bobby W. Sandage, Jr.	Director	August 2, 2017

* Pursuant to Power of Attorney

By: /s/ William D. Schwieterman
William D. Schwieterman, Attorney-in-fact

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference			Filed Herewith
		Form	Filing Date	Exhibit Number	
3.1	Restated Certificate of Incorporation of the Registrant, as amended by Certificates of Amendment dated June 22, 1995, November 15, 1996, July 14, 2005, June 2, 2009, February 8, 2010, August 5, 2010, February 22, 2011, May 29, 2012, December 27, 2012, July 17, 2013 and June 16, 2016.	10-K	3/30/2017	3.1	
3.2	Amended and Restated By-Laws of the Registrant.	8-K	6/17/2016	3.2	
4.1	Specimen Common Stock Certificate.	10-Q	8/2/2016	4.1	
4.2	Form of Series A/B Common Stock Purchase Warrant.	8-K	4/11/2013	4.1	
4.3	Form of Common Stock Purchase Warrant.	8-K	9/20/2013	4.1	
4.4	Form of Common Stock Purchase Warrant.	S-1/A	1/31/2014	4.9	
4.5	Form of Placement Agent Purchase Warrant.	S-1/A	1/31/2014	4.8	
4.6	Form of Common Stock Purchase Warrant.	8-K	2/14/2014	4.1	
4.7	Form of Placement Agent Purchase Warrant.	8-K	2/14/2014	4.2	
4.8	Form of Common Stock Purchase Warrant.	8-K	3/20/2015	4.1	
4.9	Form of Common Stock Purchase Warrant.	8-K	5/23/2014	4.1	
4.10	Form of Pre-Funded Common Stock Warrant	S-1/A	6/13/2017	4.10	
4.11	Form of Placement Agent Common Stock Warrant	S-1/A	6/13/2017	4.11	
4.12	Form of Common Stock Purchase Warrant	S-1/A	6/13/2017	4.12	
5.1	Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. regarding legality of securities being registered.				X
10.1	Technology Development Agreement, dated as of May 27, 1997, between the Registrant and the Arizona Board of Regents, acting for and on behalf of Arizona State University.	10-K	4/15/1998	10.9	
10.2	License Agreement No. 206-01.LIC by and between the Arizona Board of Regents, acting on behalf of and for Arizona State University, and OXiGENE Europe AB, dated August 2, 1999.	10-K/A	8/12/2003	10.27	
10.3	Amendment and Confirmation of License Agreement No. 206-01.LIC, dated as of June 10, 2002, between the Registrant and the Arizona Board of Regents, acting for and on behalf of Arizona State University.	10-Q	8/14/2002	10.29	
10.4	Research Collaboration and License Agreement, dated as of December 15, 1999, between OXiGENE Europe AB and Bristol-Myers Squibb Company. *	8-K	12/28/1999	99.1	
10.5	Termination Agreement by and between OXiGENE Europe AB and Bristol-Myers Squibb Company dated as of February 15, 2002.	10-Q	8/14/2002	10.14	

10.6	Research and License Agreement between the Registrant and Baylor University, dated June 1, 1999.	10-K/A	8/12/2003	10.28
10.7	Agreement to Amend Research and License Agreement between the Registrant and Baylor University, dated April 23, 2002.	10-K/A	8/12/2003	10.29
10.8	Addendum to Research and License Agreement between the Registrant and Baylor University, dated April 14, 2003.	10-K/A	8/12/2003	10.30
10.9	Lease between Broadway 701 Gateway Fee LLC, a Delaware Limited Liability Company, as Landlord, and the Registrant, as Tenant, dated October 10, 2008.	10-K	3/30/2009	10.59
10.10	Third Amendment to Lease, dated as of April 1, 2013, by and between the Registrant and DWF III Gateway, LLC, a Delaware limited liability company.	10-Q	5/9/2013	10.1
10.11	Fourth Amendment to Lease, dated April 28, 2014, by and between the Registrant and DWF III Gateway, LLC.	10-Q	5/8/2014	10.1
10.12	Mateon Therapeutics, Inc. 2005 Stock Plan (as amended and restated on January 12, 2017). +	8-K	1/13/2017	10.4
10.13	Form of Incentive Stock Option Agreement under Mateon's 2005 Stock Plan. +	10-K	3/14/2006	10.29
10.14	Form of Non-Qualified Stock Option Agreement under Mateon's 2005 Stock Plan. +	10-K	3/14/2006	10.30
10.15	Form of Restricted Stock Agreement under Mateon's 2005 Stock Plan. +	10-K	3/14/2006	10.31
10.16	Mateon Therapeutics, Inc. 2015 Equity Incentive Plan (as amended and restated on January 12, 2017). +	8-K	1/13/2017	10.3
10.17	Form of Option Agreement under Mateon's 2015 Equity Incentive Plan. +	10-Q	8/6/2015	10.6
10.18	Mateon Therapeutics, Inc. 2017 Equity Incentive Plan. +	8-K	1/13/2017	10.1
10.19	Form of Option Agreement under Mateon's 2017 Equity Incentive Plan. +	8-K	1/13/2017	10.2
10.20	Form of Indemnification Agreement. +	10-Q	8/13/2012	10.2
10.21	Mateon Therapeutics, Inc. Amended and Restated Non-Employee Director Compensation Policy, effective July 2014. +	10-Q	8/8/2014	10.4
10.22	Mateon Therapeutics, Inc. Amended and Restated Non-Employee Director Compensation Policy, effective October 25, 2016. +	8-K	10/28/2016	10.2
10.23	Employment Agreement by and between the Registrant and William D. Schwieterman, dated as of May 12, 2015. +	10-Q	8/6/2015	10.1
10.24	Amendment No. 1 to Employment Agreement by and between William D. Schwieterman, dated as of July 31, 2015. +	10-Q	8/6/2015	10.7
10.25	Employment Agreement by and between the Registrant and David J. Chaplin, dated as of May 16, 2014. +	10-Q	8/8/2014	10.1
10.26	Amended and Restated Employment Agreement by and between the Registrant and David J. Chaplin, dated as of May 12, 2015. +	10-Q	8/6/2015	10.3

10.27	Second Amended and Restated Employment Agreement by and between the Registrant and David J. Chaplin, effective as of January 1, 2017. +	8-K	10/28/2016	10.1	
10.28	Employment Agreement by and between the Registrant and Matthew M. Loar, dated as of July 20, 2015. +	10-Q	8/6/2015	10.2	
10.29	Securities Purchase Agreement, dated as of March 20, 2015, by and among the Registrant and the purchasers named therein.	8-K	3/20/2015	10.1	
10.30	Securities Purchase Agreement, dated as of May 22, 2014, by and among the Company and the purchasers named therein.	8-K	5/23/2014	10.1	
10.31	Registration Rights Agreement, dated as of May 22, 2014, by and among the Company and the purchasers named therein.	8-K	5/23/2014	10.2	
10.32	Form of Securities Purchase Agreement.	S-1/A	6/13/2017	10.32	
10.33	Engagement Letter, dated May 4, 2017, by and between the Registrant and Rodman and Renshaw, a unit of H.C. Wainwright & Co., LLC.	S-1/A	6/13/2017	10.33	
23.1	Consent of Independent Registered Public Accounting Firm.				X
23.2	Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in Exhibit 5.1).				X
24.1	Power of Attorney.	S-1	5/11/2017	24.1	

X Filed herewith.
** To be filed by amendment.
+ Management contract or compensatory plan or arrangement
* Confidential treatment has been granted for portions of this Exhibit. Redacted portions filed separately with the Securities and Exchange Commission.

Exhibit 5.1

MINTZ LEVIN

One Financial Center
Boston, MA 02111
617-542-6000
617-542-2241 fax
www.mintz.com

August 2, 2017

Mateon Therapeutics, Inc.
701 Gateway Blvd., Suite 210
South San Francisco, California 94080

Ladies and Gentlemen:

This opinion is furnished to you in connection with the preparation of a Registration Statement on Form S-1 (Registration No. 333-217904) (the " Registration Statement ") filed by Mateon Therapeutics, Inc., a Delaware corporation (the " Company "), with the U.S. Securities and Exchange Commission (the " Commission ") under the Securities Act of 1933, as amended (the " Securities Act "), on May 11, 2017, as amended on June 13, 2017 and August 2, 2017, with respect to the offer and sale of (i) up to 16,666,666 shares of Common Stock of the Company, $0.01 par value per share (the " Common Stock "), (ii) warrants to purchase up to 8,333,333 shares of Common Stock (the " Common Warrants "), (iii) pre-funded warrants to purchase up to 16,666,666 shares of Common Stock (the " Pre-Funded Warrants "), and (iv) warrants to purchase up to 666,667 shares of Common Stock (the " HCW Warrants " and together with the Common Warrants and Pre-Funded Warrants, the " Warrants "; such shares of Common Stock, the shares of Common Stock underlying the HCW Warrants; the shares of Common Stock underlying the Common Warrants and the shares of Common Stock underlying the Pre-Funded Warrants collectively referred to herein as the " Securities ") to be issued to Rodman and Renshaw, a unit of H.C. Wainwright & Co., LLC (the " Placement Agent ") as compensation for its services pursuant to an engagement letter entered into by and between the Company and the Placement Agent, dated as of May 4, 2017 (the " Engagement Letter "), the form of which has been filed as Exhibit 10.33 to the Registration Statement.

The Securities are to be sold by the Company pursuant to a prospectus to be filed with the Registration Statement (the " Prospectus "), the Warrants, and a securities purchase agreement pursuant to which certain of the Securities are to be sold (the " Purchase Agreement ").

As counsel to the Company in connection with the proposed issuance and sale of the Securities, we have examined: (i) the Company's Restated Certificate of Incorporation and Amended and Restated Bylaws, each as amended to date; (ii) certain resolutions of the Board of Directors of the Company relating to the sale of the Securities; (iii) the Purchase Agreement; (iv) the Warrants; (v) the Engagement Letter; and (vi) such other proceedings, documents and records as we have deemed necessary to enable us to render this opinion. We have relied as to certain matters on information obtained from public officials, officers of the Company and other sources believed by us to be reliable.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, photostatic or facsimile copies and the authenticity of the originals of such copies.

Based upon the foregoing, as subject to the limitations set forth herein, we are of the opinion that (i) the Securities are or will be, upon issuance, duly authorized, and when issued and sold in accordance with the terms and conditions of the Purchase Agreement, the Warrants and the Prospectus, as applicable, will be validly issued, fully paid and non-assessable and (ii) provided that the Warrants have been duly executed and delivered by the Company and duly delivered to the purchasers thereof, the Warrants, when issued and sold as contemplated in the Purchase Agreement, the Registration Statement and the Prospectus in exchange for the requisite payment therefor, will be valid and legally binding obligations of the Company.

Our opinion is limited to the General Corporation Law of the State of Delaware, the laws of the State of New York and the United States federal laws, and we express no opinion with respect to the laws of any other jurisdiction. No opinion is expressed herein with respect to the qualification of the Securities under the securities or blue sky laws of any state or any foreign jurisdiction.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated under the Securities Act and to the use of this Firm's name therein and in the Prospectus under the caption "Legal Matters." In giving such consent, we do not hereby 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.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference, in the Prospectus constituting a part of this Amendment No. 2 to the Registration Statement on Form S-1 (No. 333-217904), of our report dated March 30, 2017 (which report expresses an unqualified opinion and includes an explanatory paragraph expressing substantial doubt about the Company's ability to continue as a going concern), relating to the financial statements of Mateon Therapeutics, Inc. included in the Annual Report on Form 10-K for the year ended December 31, 2016.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ OUM & CO. LLP

San Francisco, California
August 2, 2017