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As filed with the Securities and Exchange Commission on April 8, 2014
Registration Statement No. 333-

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

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

MEI PHARMA, INC.
(Exact name of registrant as specified in its charter)

Delaware	**51-0407811**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

11975 El Camino Real, Suite 101
San Diego, California 92130
(858) 792-6300
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Daniel P. Gold
President & Chief Executive Officer
MEI Pharma, Inc.
11975 El Camino Real, Suite 101
San Diego, California 92130
(858) 792-6300
(Name, address, including zip code, and telephone number, including area code, of agent for service)

with copies to:

Steven A. Navarro, Esq.
Finnbarr D. Murphy, Esq.
Morgan, Lewis & Bockius LLP
101 Park Avenue
New York, New York 10178
(212) 309-6000

Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective.

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

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

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act of 1933, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting 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	☒

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered (1)	Proposed maximum offering price per unit (2)	Proposed maximum aggregate offering price (3)	Amount of registration fee (3)
Common Stock, $0.00000002 par value (4)				
Preferred Stock, $0.01 par value (5)				
Warrants (6)				
Total	$150,000,000	100%	$150,000,000	$19,320

(1) An indeterminate aggregate initial offering price or number of the securities of each identified class is being registered as may be sold from time to time at indeterminate prices, with an initial offering price not to exceed $150,000,000 or the equivalent thereof in one or more currencies.

(2) The proposed maximum aggregate offering price of each class of securities will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of securities pursuant to General Instruction II. D of Form S-3 under the Securities Act of 1933.

(3) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933. In no event will the aggregate offering price of all securities sold by the registrant from time to time pursuant to this Registration Statement exceed $150,000,000 or the equivalent thereof in one or more other currencies.

(4) Subject to footnote (2), there is being registered hereunder an indeterminate number of shares of common stock as may from time to time be sold at indeterminate prices hereunder, and an indeterminate number of shares of common stock as may from time to time be issued upon conversion of shares of preferred stock and upon exercise of warrants, which may be sold hereunder. Pursuant to Rule 416 under the Securities Act of 1933, to the extent additional common shares may be issued or issuable as a result of a stock split or other distribution declared at any time by the registrant’s board of directors while this Registration Statement is in effect, this Registration Statement is hereby deemed to cover all of such additional shares of common stock.

(5) Subject to footnote (2), there is being registered hereunder an indeterminate number of shares of preferred stock as may from time to time be sold at indeterminate prices hereunder, and an indeterminate number of shares of preferred stock as may from time to time be issued upon exercise of warrants, which may be sold hereunder.

(6) Subject to footnote (2), there is being registered hereunder an indeterminate number of warrants as may from time to time be sold at indeterminate prices representing rights to purchase certain of the shares of common stock and shares of preferred stock registered hereunder.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information contained in this 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 effective. This prospectus it not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer and sale is not permitted.

SUBJECT TO COMPLETION, DATED APRIL 8, 2014

PROSPECTUS

$150,000,000

MEI PHARMA, INC.

Common Stock
Preferred Stock
Warrants

We may offer up to $150,000,000 aggregate dollar amount of our common stock, preferred stock and warrants to purchase our common stock or preferred stock from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

We may offer these securities at prices and on terms to be set forth in one or more supplements to this prospectus. These securities may be offered directly, through agents on our behalf or through underwriters or dealers.

Our common stock is traded on the Nasdaq Capital Market under the symbol "MEIP." On April 7, 2014, the closing price of our common stock on the Nasdaq Capital Market was $10.00 per share.

An investment in our securities involves significant risks. See "Risk Factors" on page 5 of this prospectus and in any applicable prospectus supplement and in the documents incorporated by reference in this prospectus for a discussion of factors you should carefully consider before deciding to purchase our securities.

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

The date of this prospectus is , 2014.

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ABOUT THIS PROSPECTUS

Unless we have indicated otherwise, references in this prospectus to “MEI Pharma,” “we,” “us” and “our” or similar terms are to MEI Pharma, Inc., a Delaware corporation. References in this prospectus to “FDA” refer to the United States Food and Drug Administration.

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, utilizing a “shelf” registration statement. This prospectus provides you with a general description of the securities we may offer. We will describe the specific terms of those securities, as necessary, in supplements that we attach to this prospectus for each offering. Each supplement will also contain specific information about the terms of the offering it describes. The supplements may also add to, update or change information contained in this prospectus. In addition, as we describe in the sections entitled “Incorporation of Certain Information by Reference” and “Where You Can Find More Information,” we have filed and plan to continue to file other documents with the SEC that contain information about us. Before you decide whether to invest in our securities, you should read this prospectus, the supplement that further describes the offering of those securities and the information we otherwise file with the SEC.

The registration statement that contains this prospectus, including the exhibits to the registration statement, contains additional information about us and the securities being offered under this prospectus. You should read the registration statement and the accompanying exhibits for further information. The registration statement and exhibits can be read and are available to the public over the Internet at the SEC’s website at http: //www.sec.gov.

You should rely only on the information contained or incorporated by reference in this prospectus and in any prospectus supplement. We have not authorized any person to provide any information or make any statement that differs from what is contained in this prospectus. If any person does make a statement that differs from what is in this prospectus, you should not rely on it. This prospectus is not an offer to sell, nor is it a solicitation of an offer to buy, these securities in any state in which the offer or sale is not permitted. The information in this prospectus is accurate as of its date, but the information may change after that date. You should not assume that the information in this prospectus is accurate as of any date after its date.

SUMMARY

The Company

We are a development-stage oncology company focused on the clinical development of novel therapies for cancer. Our common stock is listed on the Nasdaq Capital Market under the symbol “MEIP”. We were incorporated in Delaware in 2000 as a wholly owned subsidiary of Novogen Limited (“Novogen”). In December 2012, Novogen distributed to its shareholders substantially all of its MEI Pharma common stock.

Our business purpose is the development of drugs for the treatment of cancer. We are principally focused on the clinical development of our lead drug candidate, Pracinostat, which we are currently investigating in three Phase II clinical trials. Pracinostat is an orally available histone deacetylase (HDAC) inhibitor that is being developed for advanced hematologic diseases such as myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML). In August 2012, we completed the acquisition of certain assets and intellectual property, including those related to Pracinostat, from S*Bio Pte Ltd (“S*Bio”). Our clinical development pipeline also includes our isoflavone-based mitochondrial inhibitor drug candidate, ME-344. Results from a Phase I clinical trial of ME-344 in patients with refractory solid tumors were presented in October 2013. We plan to initiate a Phase Ib trial in small cell lung cancer and ovarian cancer during the second quarter of calendar year 2014. In September 2013, we acquired PWT143, an oral inhibitor of phosphatidylinositide 3-kinase (PI3K) delta, a molecular target that has been shown to play a critical role in the proliferation and survival of hematologic cancer cells. We expect to complete the pre-clinical work required to support the filing of an IND application for PWT143 by the end of calendar year 2014.

We own exclusive worldwide rights to all of our drug candidates, including Pracinostat, ME-344 and PWT143.

Clinical Product Development Programs

Lead Drug Candidate: Pracinostat

We are principally focused on the clinical development of our lead drug candidate, Pracinostat. Pracinostat is an orally available selective inhibitor of a group of enzymes called histone deacetylases, or HDACs. HDACs belong to a larger set of proteins collectively known as epigenetic regulators that can alter gene expression by chemically modifying DNA or its associated chromosomal proteins. Abnormal activity of these regulators is believed to play an important role in cancer and other diseases. There are currently two HDAC inhibitors – one oral and one injectable – approved by the FDA for the treatment of T-cell lymphoma.

Pracinostat has been tested in multiple Phase I and Phase II clinical trials in advanced hematologic malignancies, such as MDS, AML and myelofibrosis, as well as in solid tumor indications in both adult and pediatric patients. Pracinostat has been generally well tolerated in more than 200 patients to date, with readily manageable side effects often associated with drugs of this class, the most frequent of which is fatigue. The results of these studies also suggest that Pracinostat has potential best-in-class pharmacokinetic properties when compared to other oral HDAC inhibitors.

Pracinostat has demonstrated clinical evidence of single-agent activity in patients with AML and myelofibrosis. In a Phase I dose-escalation trial in patients with AML, 14% of evaluable patients (two out of 14) achieved a complete remission (CR), with the responses enduring for more than 206 and 362 days, respectively. These results were presented at the American Society of Hematology (ASH) Annual Meeting in December 2010. In a Phase II clinical trial in intermediate or high-risk myelofibrosis, 36% of patients (eight of 22) demonstrated clinical response from Pracinostat treatment, with 9% of patients (two out of 22) having a clinical improvement (anemia response) and 27% (six of 22) experiencing some reduction in splenomegaly. These results were published in the September 2012 issue of *Leukemia Research*.

Pracinostat has also shown evidence of synergistic activity when used in combination with the hypomethylating agent, Vidaza® (azacitidine), in patients with advanced MDS. Results from a pilot Phase II trial presented at the ASH Annual Meeting in December 2012 showed an overall response rate of 89% (eight out of nine) among the nine patients treated at the MD Anderson Cancer Center, including seven patients who achieved either a CR or a complete remission with incomplete blood count recovery (CRi). An additional patient treated at the University of Wisconsin-Madison achieved a CR, increasing the overall response rate in the trial to 90% (nine out of 10). The combination of Pracinostat and Vidaza was well tolerated in the study; the most frequent side effects were nausea and fatigue.

In June 2013, we initiated a double-blinded, placebo-controlled Phase II clinical trial of Pracinostat in combination with Vidaza in intermediate-2 or high-risk patients with previously untreated MDS. The multicenter trial is expected to enroll approximately 100 patients with a one-to-one randomization. Completion of enrollment is anticipated by the third quarter of calendar year 2014 with data expected in the first quarter of calendar year 2015. The primary endpoint of the study is CR. Secondary endpoints include overall response rate (CR+CRi+PR), hematologic improvement, duration of response, progression-free survival, rate of leukemic transformation, overall survival and safety.

In addition, we have initiated two open-label Phase II trials of Pracinostat: one in combination with Vidaza in elderly patients with AML who are not suited for intensive chemotherapy and the other in combination with Vidaza or Dacogen® (decitabine) in patients with MDS who either failed to respond or maintain a response to a hypomethylating agent alone. Preliminary data from both open-label trials are anticipated in December 2014.

In February 2014, the FDA granted orphan drug designation to Pracinostat for the treatment of AML. The designation provides orphan status to drugs defined by the FDA as those intended for the safe and effective treatment, diagnosis or prevention of rare diseases that affect fewer than 200,000 people in the U.S. Orphan designation qualifies us for certain development incentives, including tax credits for qualified clinical testing, prescription drug user fee exemptions and seven-year marketing exclusivity upon FDA approval.

Mitochondrial Inhibitor Drug Candidate: ME-344

ME-344 is our isoflavone-derived mitochondrial inhibitor drug candidate. In pre-clinical studies, ME-344 has been shown to cause cell death in multiple human tumor cell lines, including ovarian cancer stem cells, by interfering with mitochondrial energy generation. In April 2013, Dr. Ayesha Alvero, Yale University School of Medicine, presented data at the American Association for Cancer Research (AACR) Annual Meeting showing the ability of ME-344 to decrease tumor burden and delay recurrence in a pre-clinical *in vivo* model of recurrent epithelial ovarian cancer, the most lethal of all gynecological malignancies.

In October 2013, results from our first-in-human, single-agent Phase I clinical trial of ME-344 in patients with refractory solid tumors were presented at the AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics. The results indicated that eight of 21 evaluable patients (38%) treated with ME-344 achieved stable disease or better, including five who experienced progression-free survival that was at least twice the duration of their last prior treatment before entry into the study. In addition, one of these patients, a heavily pre-treated patient with small cell lung cancer, achieved a confirmed partial response. This patient remains on study and continues weekly dosing (85+ weeks as of April 1, 2014). ME-344 was generally well tolerated at doses equal to or less than 10 mg/kg delivered on a weekly schedule for extended durations. Dose limiting toxicities were observed at both the 15 mg/kg and 20 mg/kg dose levels, consisting primarily of Grade 3 peripheral neuropathy. Other medically significant adverse events observed in single patients included angina and QTc prolongation at the 10 mg/kg dose.

We are now preparing for a Phase Ib clinical trial of ME-344 in combination with Hycamtin® (topotecan) in small cell lung cancer and ovarian cancer, which we expect to initiate during the second quarter of calendar year 2014. The Phase Ib trial will be designed to evaluate the safety and tolerability of ME-344 in combination with

Hycamtin in a total of 45 patients with either small cell lung cancer or ovarian cancer. Hycamtin is a chemotherapy approved by the FDA for the treatment of small cell lung, ovarian and cervical cancers.

NADH Oxidase Drug Candidate: ME-143

ME-143 is our isoflavone-based NADH oxidase inhibitor drug candidate. Results from a Phase I dose-escalation study of intravenous ME-143 in patients with solid refractory tumors were presented at the American Society of Clinical Oncology Annual Meeting in June 2012. The data showed that ME-143 was generally well tolerated with the exception of a serious infusion reaction in one patient at the highest dose level. No additional clinical studies of ME-143 are planned at this time.

PI3-Kinase Delta Drug Candidate: PWT143

In September 2013, we acquired exclusive worldwide rights to PWT143 from Pathway Therapeutics, Inc. for an undisclosed upfront cash payment with no future milestone or royalty obligations. In pre-clinical studies, PWT143 has been found to be a potent and highly selective oral inhibitor of PI3-kinase delta, a molecular target that has been shown to play a critical role in the proliferation and survival of certain hematologic cancer cells. We expect to complete the required pre-clinical studies necessary for an IND filing by the end of calendar year 2014.

Corporate Information

Our principal executive offices are located at 11975 El Camino Real, Suite 101, San Diego, California, 92130, and our phone number is (858) 792-6300.

RISK FACTORS

Any investment in our securities involves a high degree of risk. In addition to the other information included or incorporated by reference in this prospectus and any accompanying prospectus supplement, you should carefully consider the important factors set forth under the heading “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended June 30, 2013, and in our subsequent annual reports on Form 10-K and in other reports we file with the SEC from time to time, which are incorporated herein by reference, before investing in our securities. Any of the risk factors referred to above could significantly and negatively affect our business, results of operations or financial condition, which may lower the trading price of our common stock. The risks referred to above are not the only ones that may exist. Additional risks not currently known by us or that we deem immaterial may also impair our business operations. You may lose all or a part of your investment. For further details, see the sections entitled “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

CAUTIONARY STATEMENT ABOUT FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts contained in this prospectus and in the documents incorporated by reference herein, including statements regarding the future financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "should," "plan," "expect," and similar expressions, as they relate to us, are intended to identify forward-looking statements. We have based these forward-looking statements largely on current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including, without limitation, those described in "Risk Factors" and elsewhere in this prospectus and the documents incorporated by reference herein, including, among other things:

- our inability to obtain required additional financing or financing available to us on acceptable terms, or at all, which may cause us to delay, scale-back or eliminate plans related to development of our drug candidates;
- we are in an early stage of clinical studies for our product candidates on which our development plans are based; clinical studies by their nature typically have a high level of risk and may not produce successful results;
- the results of pre-clinical studies and completed clinical trials are not necessarily predictive of future results, and our current drug candidates may not have favorable results in later studies or trials;
- our inability to maintain or enter into, and the risks resulting from our dependence upon, contractual arrangements necessary for the clinical development, manufacture, commercialization, marketing, sales and distribution of our product candidates;
- costs and delays in our clinical development programs and/or receipt of FDA or other required governmental or regulatory approvals, or the failure to obtain such approvals, for our product candidates;
- the FDA's interpretation and our interpretation of data from pre-clinical and clinical studies may differ significantly;
- our failure to successfully commercialize our product candidates;
- the failure of any products to gain market acceptance;
- our inability to control the costs of manufacturing our products;
- competition and competitive factors;
- our inability to protect our patents or proprietary rights and obtain necessary rights to third party patents and intellectual property to operate our business;
- our inability to operate our business without infringing the patents and proprietary rights of others;
- costs stemming from our defense against third party intellectual property infringement claims;
- general economic conditions;
- technological changes;
- government regulation generally;
- changes in industry practice; and
- one-time events.

These risks are not exhaustive. Other sections of this prospectus and the documents incorporated by reference herein include additional factors which could adversely impact our business and financial performance. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time and it is not possible for us to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

You should not rely upon forward looking statements as predictions of future events. We cannot assure you that the events and circumstances reflected in the forward looking statements will be achieved or occur. Although we believe that the expectations reflected in the forward looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements.

SECURITIES OFFERED BY THIS PROSPECTUS

Using this prospectus, we may offer from time to time, in one or more series, together or separately, at prices and terms to be determined at the time of offering:

- shares of common stock, $0.00000002 par value;
- shares of preferred stock, $0.01 par value; and
- warrants to purchase shares of common stock or preferred stock.

The shares of preferred stock may be convertible into or exchangeable for shares of our common stock or preferred stock issued by us.

See “Description of Securities” for a description of the terms of the common stock, preferred stock and warrants.

USE OF PROCEEDS

Although we expect to use a substantial portion of the net proceeds from the sale of securities under this prospectus for general corporate purposes, including to progress our clinical trial programs, we have not allocated these net proceeds for specific purposes. If, as of the date of any prospectus supplement, we have identified any additional use for the net proceeds, we will describe them in the prospectus supplement. The amount of securities offered from time to time pursuant to this prospectus and any prospectus supplement, and the precise amount of the net proceeds we will receive from the sale of such securities, as well as the timing of receipt of those proceeds, will depend upon our funding requirements. If we elect at the time of an issuance of securities to make different or more specific uses of the proceeds than as set forth herein, we will describe those uses in the applicable prospectus supplement.

RATIOS OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

We incurred net losses for the six months ended December 31, 2013 and for each of the fiscal years ended June 30, 2013, 2012, 2011, 2010 and 2009. We did not have any fixed charges for the six months ended December 31, 2013 or the fiscal years ended June 30, 2013, 2012 and 2011, other than insignificant charges related to a premises rental agreement. There were no fixed charges for the years ended June 30, 2010 and 2009. We had shares of preferred stock outstanding during the fiscal years ended June 30, 2012 and 2011; however, these shares of preferred stock were not entitled to dividends and no dividends were paid with respect to such shares. Accordingly, we are unable to present a ratio of earnings to combined fixed charges and preference share dividends.

PLAN OF DISTRIBUTION

We may sell the securities included in this prospectus (i) through agents, (ii) through underwriters, (iii) through dealers, (iv) directly to a limited number of purchasers or to a single purchaser, or (v) through a combination of any such methods of sale.

The distribution of the securities may be effected from time to time in one or more transactions, including block transactions and transactions on the Nasdaq Capital Market or any other organized market where the securities may be traded:

- at a fixed price or at final prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Offers to purchase securities may be solicited directly by us, or by agents designated by us, from time to time. Any such agent, which may be deemed to be an underwriter as that term is defined in the Securities Act, as amended, involved in the offer or sale of the securities in respect of which this prospectus is delivered will be named, and any commissions payable by us to such agent will be set forth, in the applicable prospectus supplement.

If an underwriter is, or underwriters are, utilized in the offer and sale of securities in respect of which this prospectus and the applicable prospectus supplement are delivered, we will execute an underwriting agreement with such underwriter(s) for the sale to it or them and the name(s) of the underwriter(s) and the terms of the transaction, including any underwriting discounts and other items constituting compensation of the underwriters and dealers, if any, will be set forth in such prospectus supplement, which will be used by the underwriter(s) to make resales of the securities in respect of which this prospectus and such prospectus supplement are delivered to the public. The securities will be acquired by the underwriters for their own accounts and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Any initial public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time.

If a dealer is utilized in the sale of the securities in respect of which this prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale. The name of the dealer and the terms of the transaction will be identified in the applicable prospectus supplement.

If an agent is used in an offering of securities being offered by this prospectus, the agent will be named, and the terms of the agency will be described, in the applicable prospectus supplement relating to the offering. Unless otherwise indicated in the prospectus supplement, an agent will act on a best efforts basis for the period of its appointment.

If indicated in the applicable prospectus supplement, we will authorize underwriters or their other agents to solicit offers by certain institutional investors to purchase securities from us pursuant to contracts providing for payment and delivery at a future date. Institutional investors with which these contracts may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others. In all cases, these purchasers must be approved by us. The obligations of any purchaser under any of these contracts will not be subject to any conditions except that (a) the purchase of the securities must not at the time of delivery be prohibited under the laws of any jurisdiction to which that purchaser is subject, and (b) if the securities are also being sold to underwriters, we must have sold to these underwriters the securities not subject to delayed delivery. Underwriters and other agents will not have any responsibility in respect of the validity or performance of these contracts.

Certain of the underwriters, dealers or agents utilized by us in any offering hereby may be customers of, including borrowers from, engage in transactions with, and perform services for us or one or more of our affiliates in the ordinary course of business. Underwriters, dealers, agents and other persons may be entitled, under agreements which may be entered into with us, to indemnification against certain civil liabilities, including liabilities under the Securities Act.

Until the distribution of the securities is completed, rules of the SEC may limit the ability of the underwriters and certain selling group members, if any, to bid for and purchase the securities. As an exception to these rules, the representatives of the underwriters, if any, are permitted to engage in certain transactions that stabilize the price of the securities. Such transactions may consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities.

If underwriters create a short position in the securities in connection with the offering thereof (in other words, if they sell more securities than are set forth on the cover page of the applicable prospectus supplement), the representatives of such underwriters may reduce that short position by purchasing securities in the open market. Any such representatives also may elect to reduce any short position by exercising all or part of any over-allotment option described in the applicable prospectus supplement.

Any such representatives also may impose a penalty bid on certain underwriters and selling group members. This means that if the representatives purchase securities in the open market to reduce the underwriters' short position or to stabilize the price of the securities, they may reclaim the amount of the selling concession from the underwriters and selling group members who sold those shares as part of the offering thereof.

In general, purchases of a security for the purpose of stabilization or to reduce a syndicate short position could cause the price of the security to be higher than it might otherwise be in the absence of such purchases. The imposition of a penalty bid might have an effect on the price of a security to the extent that it was to discourage resales of the security by purchasers in the offering.

Neither we nor any of the underwriters, if any, makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the securities. In addition, neither we nor any of the underwriters, if any, makes any representation that the representatives of the underwriters, if any, will engage in such transactions or that such transactions, once commenced, will not be discontinued without notice.

The anticipated date of delivery of the securities offered by this prospectus will be described in the applicable prospectus supplement relating to the offering. The securities offered by this prospectus may or may not be listed on a national securities exchange or a foreign securities exchange. We cannot give any assurances that there will be a market for any of the securities offered by this prospectus and any prospectus supplement.

We will bear costs relating to all of the securities being registered under this prospectus, other than underwriters' discounts and commissions. In compliance with the guidelines of the Financial Services Regulatory Authority, Inc., or FINRA, the maximum compensation to be received by a FINRA member or independent broker-dealer may not exceed 8% of the offering proceeds. It is anticipated that the maximum compensation to be received in any particular offering of securities will be less than this amount.

DESCRIPTION OF SECURITIES

Securities We May Offer Under this Prospectus

Common Stock

For a description of our common stock, please see our Registration Statement on Form 8-A filed with the SEC on November 26, 2003, and any further amendment or report filed thereafter for the purpose of updating such description.

Preferred Stock

The material terms of any series of preferred stock that we offer through a prospectus supplement will be described in that prospectus supplement. Our board of directors is authorized to provide for the issuance of blank check preferred stock in one or more series with designations as may be stated in the resolution or resolutions providing for the issue of such preferred shares. At the time that any series of our preferred stock is authorized, our board of directors will fix the dividend rights, any conversion rights, any voting rights, redemption provisions, liquidation preferences and any other rights, preferences, privileges and restrictions of that series, as well as the number of shares constituting that series and their designation. Our board of directors could, without stockholder approval, cause us to issue preferred stock which has voting, conversion and other rights that could adversely affect the holders of our common stock or make it more difficult to effect a change in control. Our preferred stock could be used to dilute the share ownership of persons seeking to obtain control of us and thereby hinder a possible takeover attempt which, if our stockholders were offered a premium over the market value of their shares, might be viewed as being beneficial to our stockholders. In addition, our preferred stock could be issued with voting, conversion and other rights and preferences which would adversely affect the voting power and other rights of holders of our common stock.

Warrants

We may issue warrants to purchase our common stock or preferred stock. Warrants may be issued independently or together with any other securities and may be attached to, or separate from, such securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a warrant agent. The terms of any warrants to be issued and a description of the material provisions of the applicable warrant agreement will be set forth in the applicable prospectus supplement.

The applicable prospectus supplement will describe the following terms of any warrants in respect of which this prospectus is being delivered:

- the title of such warrants;
- the aggregate number of such warrants;
- the price or prices at which such warrants will be issued;
- the currency or currencies, in which the price of such warrants will be payable;
- the securities purchasable upon exercise of such warrants;
- the price at which and the currency or currencies in which the securities or other rights purchasable upon exercise of such warrants may be purchased;
- the date on which the right to exercise such warrants shall commence and the date on which such right shall expire;
- if applicable, the minimum or maximum amount of such warrants which may be exercised at any one time;
- if applicable, the designation and terms of the securities with which such warrants are issued and the number of such warrants issued with each such security;

- if applicable, the date on and after which such warrants and the related securities will be separately transferable;
- information with respect to book-entry procedures, if any;
- if applicable, a discussion of any material United States federal income tax considerations; and
- any other terms of such warrants, including terms, procedures and limitations relating to the exchange and exercise of such warrants.

Description of Share Capital

We are authorized to issue 113,000,000 shares of common stock, par value $0.00000002 per share, and 100,000 shares of preferred stock, par value $0.01 per share. As of April 7, 2014, we had 21,607,234 shares of common stock outstanding and no shares of preferred stock outstanding. Also as of April 7, 2014, we had outstanding (i) 1,136,100 shares of our common stock subject to outstanding options, with exercise prices ranging from $2.76 to $30.30 per share, (ii) 400,000 restricted stock units, each representing the contingent right to receive one share of our common stock, (iii) 4,898,665 shares of our common stock subject to outstanding warrants, with exercise prices ranging from $3.12 to $7.14 per share, (iv) based on an assumed price per share of $10.00, which was the last reported sale price of our common stock on the Nasdaq Capital Market on April 7, 2014, up to 50,000 shares of common stock that may be issuable upon our achievement of certain clinical and regulatory milestones pursuant to the terms of the August 2012 Asset Purchase Agreement between the Company and S*Bio, and (v) 716,233 shares of our common stock available for awards under our Amended and Restated 2008 Stock Omnibus Equity Compensation Plan.

LEGAL MATTERS

The validity of the securities described herein will be passed upon for us by Morgan, Lewis & Bockius LLP.

EXPERTS

The financial statements as of June 30, 2013 and 2012, and for each of the two years in the period ended June 30, 2013 and for the period from inception (December 1, 2000) to June 30, 2013, incorporated by reference in this prospectus have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus and any accompanying prospectus supplement the information we have filed with the SEC. The information we incorporate by reference into this prospectus is an important part of this prospectus. Any statement in a document we incorporate by reference into this prospectus will be considered to be modified or superseded to the extent a statement contained in this prospectus, any accompanying prospectus supplement or any other subsequently filed document that is incorporated by reference into this prospectus or any accompanying prospectus supplement modifies or supersedes that statement. The modified or superseded statement will not be considered to be a part of this prospectus or any accompanying prospectus supplement, as applicable, except as modified or superseded.

We incorporate by reference into this prospectus the information contained in the documents listed below, which are considered to be a part of this prospectus:

- our Annual Report on Form 10-K for the fiscal year ended June 30, 2013, as amended by the Form 10-K/A filed on September 27, 2013;
- our Quarterly Reports on Form 10-Q for the quarters ended September 30, 2013 and December 31, 2013;
- our Current Reports on Form 8-K filed with the SEC on October 21, 2013, October 29, 2013, December 6, 2013, March 26, 2014 and April 8, 2014; and
- the description of our common stock contained in the Registration Statement on Form 8-A filed on November 26, 2003 and any further amendment or report filed thereafter for the purpose of updating such description.

We also incorporate by reference all documents filed pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after (i) the date of the initial registration statement and prior to the effectiveness of the registration statement and (ii) the date of this prospectus and prior to the termination of the offering of the securities under this registration statement (except in each case for the information contained in such documents that is deemed to be "furnished" and not "filed").

Statements made in this prospectus or any accompanying prospectus supplement or in any document incorporated by reference in this prospectus or any accompanying prospectus supplement as to the contents of any contract or other document referred to herein or therein are not necessarily complete, and in each instance reference is made to the copy of such contract or other document filed as an exhibit to the documents incorporated by reference, each such statement being qualified in all material respects by such reference.

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

MEI Pharma, Inc.
11975 El Camino Real, Suite 101
San Diego, California 92130
Tel: (858) 792-6300
Attn: Investor Relations

Copies of these filings are also available, without charge, through the "Investors" section of our website (www.meipharma.com) as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not a part of this prospectus.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov. The SEC's website contains reports, proxy and information statements and other information regarding issuers, such as us, that file electronically with the SEC. You may also read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of its Public Reference Room.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the estimated costs and expenses, other than sales commissions or discounts, payable by the registrant in connection with the offering of the securities being registered. All of the amounts shown are estimates, except for the registration fee.

SEC registration fee	$ 19,320
Printing and engraving fees	10,000
Legal fees	150,000
Accounting fees	75,000
Miscellaneous	25,000
Total	$279,320

Item 15. Indemnification of Directors and Officers

Our Restated Certificate of Incorporation, as amended, provides that we will indemnify our directors and officers to the full extent permitted by the Delaware General Corporation Law, or DGCL. Section 145 of the DGCL provides that the extent to which a corporation may indemnify its directors and officers depends on the nature of the action giving rise to the indemnification right. In actions not on behalf of the corporation, directors and officers may be indemnified for acts taken in good faith and in a manner reasonably believed to be in or not opposed to the best interests of the corporation. In actions on behalf of the corporation, directors and officers may be indemnified for acts taken in good faith and in a manner reasonably believed to be in or not opposed to the best interests of the corporation, except for acts as to which the director or officer is adjudged liable to the corporation, unless the relevant court determines that indemnification is appropriate despite such liability. Section 145 of the DGCL also permits a corporation to (i) reimburse present or former directors or officers for their defense expenses to the extent they are successful on the merits or otherwise and (ii) advance defense expenses upon receipt of an undertaking to repay the corporation if it is determined that payment of such expenses is unwarranted.

To supplement the general indemnification right contained in our Restated Certificate of Incorporation, our Amended and Restated By-Laws provide for the specific indemnification rights permitted by Section 145 (as described above). Our Amended and Restated By-Laws also permit us to purchase Directors & Officers insurance, but no director or officer has a right to require this.

In addition to the indemnification rights described above, our Restated Certificate of Incorporation, as amended, eliminates any monetary liability of directors to us or our stockholders for breaches of fiduciary duty except for (i) breaches of the duty of loyalty, (ii) acts or omissions in bad faith, (iii) improper dividends or share redemptions and (iv) transactions from which the director derives an improper personal benefit.

Finally, we have entered into an indemnification agreement with each of our directors and executive officers. Subject to certain exceptions, the indemnification agreements provide that an indemnitee will be indemnified for all expenses incurred or paid by the indemnitee in connection with a proceeding to which the indemnitee was or is a party, or is threatened to be made a party, by reason of the indemnitee’s status with or service to us or to another entity at our request. In connection with proceedings other than those by or in the right of our company and to which the indemnitee was or is a party, or is threatened to be made a party, by reason of the indemnitee’s status with or service to us or to another entity at our request, the indemnification agreements provide that an indemnitee will also be indemnified for all liabilities incurred or paid by the indemnitee. The indemnification agreements also provide for advancement of expenses incurred by an indemnitee in connection with an indemnifiable claim, subject to reimbursement in certain circumstances.

Item 16. Exhibits

See Exhibit Index following signature page.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

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

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

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

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

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if the registration statement is on Form S-3 or Form F-3 and 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 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b)) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement

relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is a part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is a part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

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

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

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

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

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

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.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the 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 Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, California, on this 8th day of April, 2014.

MEI PHARMA, INC.

By: /s/ Daniel P. Gold
Name: Daniel P. Gold
Title: Chief Executive Officer

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Daniel P. Gold and Thomas M. Zech, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file, any and all amendments to this registration statement, including any and all post-effective amendments and amendments thereto and any other registration statement relating to the same offering as this registration statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or either of them or their or his or her substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities indicated below on April 8, 2014.

Signature	Title
/s/ Daniel P. Gold Daniel P. Gold	Chief Executive Officer, President and Director (Principal Executive Officer)
/s/ Thomas M. Zech Thomas M. Zech	Chief Financial Officer (Principal Financial and Accounting Officer)
/s/ Christine A. White Christine A. White	Lead Director
/s/ Charles V. Baltic III Charles V. Baltic III	Director
/s/ Leah R. Cann Leah R. Cann	Director
/s/ Nicholas R. Glover Nicholas R. Glover	Director
/s/ Thomas C. Reynolds Thomas C. Reynolds	Director
/s/ William D. Rueckert William D. Rueckert	Director

Table of Contents

EXHIBIT INDEX

Exhibit No.	Description
1.1	Form of Underwriting Agreement*
3.1	Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to Registrant's Registration Statement on Form S-1 filed on September 25, 2003 (Reg. No. 333-109129).
3.2	Certificate of Amendment to the Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1.1 to the Registrant's Current Report on Form 8-K filed on March 31, 2010).
3.3	Certificate of Amendment to the Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on December 19, 2012).
3.4	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to Registrant's Current Report on Form 8-K filed on March 26, 2014).
3.5	Certificate of Designation of Preferred Stock*
4.1	Specimen Common Stock Certificate*
4.2	Specimen Preferred Stock Certificate*
4.3	Specimen Warrant Certificate*
4.4	Form of Warrant *
4.5	Form of Warrant Agreement*
5.1	Opinion of Morgan, Lewis & Bockius LLP
12.1	Statement re Computation of Ratios
23.1	Consent of Morgan, Lewis & Bockius LLP (included as Exhibit 5.1)
23.2	Consent of BDO USA, LLP
24.1	Power of Attorney (included on signature page)

* To be filed by amendment or Form 8-K.

Exhibit 5.1

[Letterhead of Morgan, Lewis & Bockius LLP]

April 8, 2014

MEI Pharma, Inc.
11975 El Camino Real, Suite 101
San Diego, California 92130

Re: MEI Pharma, Inc. – Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to MEI Pharma, Inc., a Delaware corporation (the "Company"), in connection with the Registration Statement on Form S-3 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Securities Act") relating to the proposed offer and sale by the Company, from time to time, as set forth in the prospectus (the "Prospectus") contained in the Registration Statement and as shall be set forth in one or more supplements to the Prospectus (each, a "Prospectus Supplement") of up to $150,000,000 of the Company's common stock, par value $0.00000002 per share (the "Common Stock"), preferred stock, in one or more classes or series (the "Preferred Stock"), and warrants to purchase the Common Stock and Preferred Stock (the "Warrants," and collectively with the Common Stock and the Preferred Stock, the "Securities").

Warrants will be issued pursuant to a warrant agreement (the "Warrant Agreement") to be entered into between the Company and a bank or trust company acting as Warrant Agent.

In connection with this opinion letter, we have examined originals, or copies certified or otherwise identified to our satisfaction, of the Registration Statement, the Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation"), and the Amended and Restated By-Laws (the "By-Laws") of the Company and such other documents, records and other instruments as we have deemed appropriate for purposes of the opinions set forth herein.

We have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of the documents submitted to us as originals, the conformity with the originals of all documents submitted to us as certified, facsimile or photostatic copies and the authenticity of the originals of all documents submitted to us as copies.

With respect to our opinion as to the Common Stock, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Common Stock will be authorized and available for issuance and that the consideration for the issuance and sale of the Common Stock (or Preferred Stock convertible into Common Stock or Warrants exercisable for Common Stock) will be in an amount that is not less than the par value of the Common Stock. With respect to our opinion as to the Preferred Stock, we have assumed that (i) prior to any issuance or sale of shares of a class or series of Preferred Stock, an appropriate Certificate of Designations with respect to such class or series of Preferred Stock will have been duly authorized by all necessary corporate action on the part of the Company and filed with the

Secretary of State of the State of Delaware and (ii) at the time of issuance and sale, a sufficient number of shares of Preferred Stock will be authorized, designated and available for issuance and that the consideration for the issuance and sale of the Preferred Stock (or Warrants exercisable for Preferred Stock) will be in an amount that is not less than the par value of the Preferred Stock. We have also assumed that any Warrants offered under the Registration Statement will be executed in the forms filed as exhibits to the Registration Statement.

Subject to the foregoing and the other matters set forth herein, it is our opinion that:

1. With respect to the Common Stock offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws, (ii) the issuance of the Common Stock has been duly authorized by all necessary corporate action on the part of the Company and (iii) the issuance and sale of the Common Stock do not violate any applicable law, are in conformity with the Company's Certificate of Incorporation and By-Laws, do not result in a default under or breach of any agreement or instrument binding upon the Company, then the Common Stock, when issued and sold as contemplated in the Registration Statement, the Prospectus and the related Prospectus Supplement(s) and in accordance with any applicable duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Preferred Stock, in accordance with its terms, or upon exercise of any Warrant, in accordance with its terms, will be duly authorized, validly issued, fully paid and nonassessable.

2. With respect to the Preferred Stock offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws, (ii) the terms and issuance of the Preferred Stock have been duly authorized by all necessary corporate action on the part of the Company and (iii) the terms of the shares of Preferred Stock and their issuance and sale do not violate any applicable law, are in conformity with the Certificate of Incorporation and By-Laws and do not result in a default under or breach of any agreement or instrument binding upon the Company, then the Preferred Stock, when issued and sold as contemplated in the Registration Statement, the Prospectus and the related Prospectus Supplement(s) and in accordance with any applicable duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon exercise of any Warrant in accordance with its terms, will be duly authorized, validly issued, fully paid and nonassessable.

3. With respect to the Warrants issued under the Warrant Agreement and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws, (ii) the Warrant Agreement has been duly authorized by the Company and the Warrant Agent by all necessary corporate action, (iii) the Warrant Agreement has been duly executed and delivered by the Company and the Warrant Agent, (iv) the issuance and terms of the Warrants have been duly authorized by the Company by all necessary corporate action and (v) the terms of the Warrants and of their issuance and sale have been duly established in conformity with the Warrant Agreement and as described in the Registration Statement, the Prospectus and the related Prospectus Supplement(s), so as to be in conformity with the Certificate of Incorporation and By-Laws and so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, then the

Warrants, when issued and sold in accordance with the Warrant Agreement and a duly authorized, executed and delivered purchase, underwriting or similar agreement, will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement thereof may be limited by applicable bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws affecting creditors' rights, and subject to general equity principles and to limitations on availability of equitable relief, including specific performance.

We assume for purposes of this opinion that (i) the Warrant Agent is duly organized, validly existing and in good standing under the laws of its jurisdiction of organization, (ii) the Warrant Agent is duly qualified to engage in the activities contemplated by the Warrant Agreement, (iii) the Warrant Agent is in compliance, generally and with respect to acting as a Warrant Agent under the Warrant Agreement, with all applicable laws and regulations, (iv) the Warrant Agent has the requisite organizational and legal power and authority to perform its obligations under the Warrant Agreement and (v) that the Warrant Agreement will be a valid, binding and enforceable obligation of the Warrant Agent.

The opinions expressed herein are limited to the Delaware General Corporation Law and we express no opinion with respect to the laws of any other state or jurisdiction. Although the Securities may be issued from time to time on a delayed or continuous basis, the opinions expressed herein are limited to such laws, including rules and regulations promulgated pursuant thereto, as in effect on the date hereof.

We hereby consent to the use of this opinion as an exhibit to the Registration Statement and to the reference to us under the caption "Legal Matters" in the prospectus included therein. In giving such consent, we do not hereby admit that we are acting within the category of persons whose consent is required under Section 7 of the Act or the rules or regulations of the U.S. Securities and Exchange Commission thereunder.

Very truly yours,

/s/ Morgan, Lewis & Bockius LLP

Exhibit 12.1

Statement re Computation of Ratios

We incurred net losses and did not have any fixed charges for the six months ended December 31, 2013 or the fiscal years ended June 30, 2013, 2012, 2011, other than insignificant charges related to a premises rental agreement. There were no fixed charges for the years ended June 30, 2010 and 2009. We had shares of preferred stock outstanding during the fiscal years ended June 30, 2012 and 2011; however, these shares of preferred stock were not entitled to dividends and no dividends were paid with respect to such shares. Accordingly, we are unable to present a ratio of combined fixed charges and preference share dividends to earnings.

Exhibit 23.2

Consent of Independent Registered Public Accounting Firm

MEI Pharma, Inc.
San Diego, California

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of our report dated September 17, 2013, relating to the financial statements of MEI Pharma, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended June 30, 2013.

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

/s/ BDO USA, LLP
San Diego, California

April 8, 2014