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As filed with the Securities and Exchange Commission on September 21, 2012

Registration 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.
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101 Park Avenue
New York, New York 10178
(212) 309-6000 (telephone number)
(212) 309-6001 (facsimile number)

Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective, as determined by the selling stockholder.

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 Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, $0.00000002 par value per share	2,565,000(2)	$0.38(3)	$974,700(3)	$112

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the “Securities Act”), this registration statement shall also cover any additional shares of common stock which become issuable by reason of any stock dividend, stock split or other similar transaction that results in an increase in the number of the outstanding shares of common stock of the registrant.

(2) The number of shares of common stock includes 1,174,536 issued shares of common stock previously issued to the selling stockholder and 1,390,464 shares of common stock, in the aggregate, that may be issuable to the selling stockholder upon the registrant’s achievement of certain clinical and regulatory milestones in accordance with the terms of the Asset Purchase Agreement, dated August 7, 2012, between the registrant and the selling stockholder.

(3) In accordance with Rule 457(c) under the Securities Act, the aggregate offering price of the common stock is estimated solely for the purpose of calculating the registration fees due for this filing. For the initial filing of this registration statement, this estimate was based on the average of the high and low sales price of our stock reported by The NASDAQ Capital Market on September 17, 2012.

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 IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THESE SECURITIES MAY NOT BE SOLD UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES, AND IS NOT SOLICITING OFFERS TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

Subject to Completion, Dated September 21, 2012

PROSPECTUS

MEI PHARMA, INC.

2,565,000 Shares of Common Stock

This prospectus relates solely to the resale by the selling stockholder identified in this prospectus of up to 2,565,000 shares of our common stock, including 1,174,536 shares of common stock issued to S*BIO Pte Ltd. ("S*BIO" or the "selling stockholder") on August 22, 2012, pursuant to the terms of that certain Asset Purchase Agreement, dated as of August 7, 2012, by and between us and S*BIO (the "Asset Purchase Agreement"), and up to an additional 1,390,464 shares of common stock that may be issuable to the selling stockholder upon our achievement of certain clinical and regulatory milestones pursuant to the terms of the Asset Purchase Agreement.

These shares will be resold from time to time by the selling stockholder. We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of securities by the selling stockholder. The selling stockholder may also sell shares of common stock under Rule 144 under the Securities Act, if available, rather than under this prospectus.

The selling stockholder may sell the shares of common stock described in this prospectus in a number of different ways and at varying prices. We provide more information about how the selling stockholder may sell its shares of common stock in the section titled "Plan of Distribution" on page 17. We will pay the expenses incurred in registering the shares of common stock covered by the prospectus, including legal and accounting fees.

Our common stock is listed on The NASDAQ Capital Market, or NASDAQ, under the symbol "MEIP." On September 20, 2012, the last reported sale price of our common stock was $0.53 per share.

Investing in our securities involves risks. See "Risk Factors" beginning on page 3 of this prospectus.

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

The date of this prospectus is , 2012.

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

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 Securities and Exchange Commission, or SEC, that contain information about us. Before you decide whether to invest in our securities, you should read this prospectus 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 into this prospectus. We have not, and the selling stockholder has not, authorized anyone to provide you with additional or different information. These securities are not being offered in any jurisdiction where the offer is not permitted. You should assume that the information in this prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or of any sale of our common stock.

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 ("SEC"). Investing in our securities involves risks. Therefore, please carefully consider the information provided under the heading "Risk Factors" starting on page 3.

The Company

MEI Pharma, Inc. (formerly Marshall Edwards Inc.) is a development-stage oncology company focused on the clinical development of novel small molecules for the treatment of cancer. We were incorporated in Delaware in 2000 as a wholly owned subsidiary of Novogen Limited ("Novogen"). Our common stock is listed on the Nasdaq Capital Market and was previously listed under the symbol "MSHL" through June 30, 2012. On July 2, 2012, in conjunction with the change of our corporate name to MEI Pharma, Inc., our common stock began trading under the symbol "MEIP". As of September 21, 2012, Novogen owned approximately 60% of the outstanding shares of our common stock, as well as all of the outstanding shares of our Series A Convertible Preferred Stock. Please refer to "Relationship with Novogen" below for a discussion of Novogen's announcement regarding a potential distribution of its MEI Pharma shares to its shareholders.

Our business purpose is the development of drugs for the treatment of cancer. We are currently focused on the clinical development of our three lead drug candidates, ME-143, ME-344 and Pracinostat. In May 2011, we completed the acquisition of certain assets and intellectual property, including those related to ME-143 and ME-344, from Novogen, in accordance with the terms of an Asset Purchase Agreement, dated as of December 21, 2010, between us, Novogen and Novogen Research Pty Limited. 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").

We believe that our existing cash balances, which were approximately $6.2 million as of June 30, 2012, will be sufficient to fund our operations until early calendar year 2013. Changes to our research and development plans or other changes affecting our operating expenses may affect actual future use of existing cash resources. In any event, however, we intend to pursue one or more capital raising transactions, whether through the sale of equity securities or the entry into strategic partnerships, in order to continue the development of our lead drug candidates and financing to fund our operations in the future. If we are unable to obtain additional funds on favorable terms or at all, we may be required to reduce or cease our operations.

Relationship with Novogen

We are 60% owned by Novogen as of September 21, 2012. Novogen also owns 1,000 shares of our Series A Convertible Preferred Stock which are initially convertible into 4,827,000 shares of our common stock, which would increase Novogen's ownership percentage to 67%. Historically, we licensed from Novogen the rights to Novogen patents and applications for our lead isoflavone-based drug candidates, as well as other compounds. Additionally, Novogen historically provided research and development services and administrative and finance services to us under service agreements. The license agreements were terminated in May 2011 in conjunction with our purchase of a portfolio of isoflavone-related assets from Novogen, which we refer to as the "Isoflavone Transaction". The service agreements were terminated in December 2010.

On July 27, 2012, Novogen announced that it had entered into a merger agreement with Kai Medical, a U.S.- based company, incorporated in Delaware. The agreement is subject to Novogen shareholder approval. In addition to the merger agreement with Kai Medical, Novogen announced that, subject to shareholder approval, it will undertake a capital reduction and *in specie* distribution to the Novogen shareholders of the shares of the

Company that it owns. This distribution will allow Novogen shareholders to own their proportionate share of the Company's common stock now held by Novogen.

Asset Purchase Agreement with S*Bio

As previously disclosed, on August 7, 2012, we entered into an Asset Purchase Agreement (the "Asset Purchase Agreement") with S*Bio Pte Ltd., a Singapore private limited company ("S* Bio"), pursuant to which the Company agreed to acquire from S*Bio all of its right, title and interest in, and assume certain liabilities relating to, certain intellectual property and other assets related to compounds SB939, SB1304, SB1354 and SB1502 (the "Acquired Compounds"), which are intended to inhibit histone deacetylase ("HDAC").

On August 22, 2012, we consummated our acquisition of the Acquired Compounds. Pursuant to the Asset Purchase Agreement, at the closing, we issued to S*Bio, in a transaction exempt from the registration requirements of the Securities Act of 1933, as amended (the "Securities Act"), pursuant to Section 4(2) thereof, 1,174,536 shares of our common stock. We have also agreed to make certain milestone payments to S*Bio based on the achievement of certain clinical, regulatory and net sales-based milestones, as well as to make certain contingent earnout payments to S*Bio. Milestone payments will be made to S*Bio up to an aggregate amount of $75.2 million if certain U.S., E.U. and Japanese regulatory approvals are obtained or if certain net sales thresholds are met in North America, the E.U. and Japan. We may pay up to $500,000 of the first milestone payment in shares of our common stock, provided that if such issuance would require us to obtain stockholder approval under Nasdaq rules and such approval has not been obtained, then the first milestone payment will be payable entirely in cash. S*Bio will be entitled to receive certain contingent earnout payments at a low, single digit percentage rate based on certain worldwide net sales thresholds on a product-by-product and country-by-country basis.

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. Our website address is www.meipharma.com.

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" starting on page 17 of our Annual Report on Form 10-K for the fiscal year ended June 30, 2012, as well as in our subsequent annual reports on Form 10-K and in other reports we file with the SEC from time to time and incorporated herein by reference, before investing in our securities. For further details, see the sections entitled "Where You Can Find More Information" and "Incorporation of Certain Information by Reference."

Any of the risk factors set forth below or 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.

Risks Related to Our Business

If we cannot obtain additional funding, our product development efforts may be reduced or discontinued and we may not be able to continue our operations.

Our audited financial statements for the year ended June 30, 2012 were prepared under the assumption that we would continue our operations as a going concern. Our independent registered public accounting firm has included a "going concern" explanatory paragraph in its report on our financial statements for the years ended June 30, 2012 and 2011 indicating that we have incurred recurring losses from operations and have no current source of revenues and limited sources of financing, and that these factors raise substantial doubt about our ability to continue as a going concern. While we believe that our existing cash balances, which were approximately $6.2 million as of June 30, 2012 will be sufficient to fund our operations until early calendar year 2013, we will need substantial additional funds to progress the clinical trial program for our drug candidates and to develop any additional compounds. Our ability to raise additional funds is uncertain; such funds may not be available on acceptable terms, or at all. In the event that we do not obtain additional capital, there is a substantial doubt of our being able to continue our operations as a going concern. If we cannot continue our operations as a going concern, our stockholders would likely lose most or all of their investment in us.

We have limited existing financial resources and will need substantial additional funds to progress the clinical trial program for our drug candidates ME-143, ME-344 and Pracinostat and to develop new compounds. The actual amount of funds we will need will be determined by a number of factors, some of which are beyond our control.

We have limited cash resources and liquidity. We will need substantial additional funds to progress the clinical trial program for our drug candidates ME-143, ME-344 and Pracinostat and to develop any additional compounds. The factors which will determine the actual amount of funds that we will need to progress the clinical trial programs for ME-143, ME-344 and Pracinostat may include the following:

- the number of sites included in the trials;
- the length of time required to enroll suitable patients;
- the number of patients who participate in the trials and the rate that they are recruited;
- the number of treatment cycles patients complete while they are enrolled in the trials; and
- the efficacy and safety profile of the product.

If we are unable to obtain additional funds on favorable terms or at all, we may be required to cease or reduce our operations. Also, if we raise more funds by selling additional securities, the ownership interests of holders of our securities will be diluted.

We cannot assure you that we will be able to obtain financing sufficient to meet our future capital and operating needs.

We intend to sell additional shares of common stock, and securities exercisable for or convertible into shares of our common stock to satisfy our capital and operating needs. If we sell shares in the future, the prices at which we sell these future shares will vary, and these variations may be significant. Purchasers of the shares we sell pursuant to future offerings, as well as our existing stockholders, will experience significant dilution if we sell these future shares at prices significantly below the price at which previous shareholders invested. The investors in our May 2011 private placement will have the right to acquire up to 35% of any securities we offer through September 28, 2013.

Future sales of our common stock, including upon conversion of our outstanding Series A Convertible Preferred Stock and exercise of our outstanding warrants, may depress the market price of our common stock and cause stockholders to experience dilution.

The market price of our common stock could decline as a result of sales of substantial amounts of our common stock in the public market, including upon exercise of outstanding warrants and the conversion of the Series A Convertible Preferred Stock. As of September 20, 2012, we had outstanding Series A warrants exercisable for an aggregate amount of approximately 2,460,617 shares of common stock at $1.00 per share, outstanding warrants issued in May 2012 in conjunction with our rights offering exercisable for 2,915,152 shares of common stock at $1.19 per share, and outstanding warrants to purchase 4,608 shares of our common stock at an exercise price of $21.70 per share. The 1,000 shares of Series A Convertible Preferred Stock held by Novogen are initially convertible into an aggregate of 4,827,000 shares of our common stock. Additionally, we have agreed to register for resale the 1,174,536 shares of common stock issued to S*Bio in connection with our acquisition of certain assets and intellectual property, including those related to Pracinostat, from S*Bio in August 2012. We intend to seek additional capital through one or more additional equity transactions, however, such transactions will be subject to market conditions and there can be no assurance any such transactions will be completed.

On July 27, 2012, Novogen announced that it had entered into a merger agreement with Kai Medical, a U.S-based company, incorporated in Delaware. The agreement is subject to Novogen shareholder approval. In addition to the merger agreement with Kai Medical, Novogen announced that, subject to shareholder approval, it will undertake a capital reduction and *in specie* distribution to the Novogen shareholders of the shares of the Company that it owns. This distribution will allow Novogen shareholders to own their proportionate share of the Company's common stock now held by Novogen.

Negative global economic conditions may pose challenges to our business strategy, which relies on access to capital from the markets or collaborators.

Negative conditions in the global economy, including credit markets and the financial services industry, have generally made equity and debt financing more difficult to obtain, and may negatively impact our ability to complete financing transactions. The duration and severity of these conditions is uncertain, as is the extent to which they may adversely affect our business and the business of current and prospective vendors and collaborators. If negative global economic conditions persist or worsen, we may be unable to secure additional funding to sustain our operations or to find suitable collaborators to advance our internal programs, even if we achieve positive results from our research and development efforts.

We have a limited operating history and are likely to incur operating losses for the foreseeable future.

You should consider our prospects in light of the risks and difficulties frequently encountered by early stage and developmental companies. We were incorporated in December 2000, and have been in operation since May 2002. We have incurred net losses of $85.1 million from our inception through June 30, 2012, including net

losses of $7.5 million and $6.8 million for the years ended June 30, 2012 and 2011, respectively. We anticipate that we will incur operating losses and negative operating cash flow for the foreseeable future. We have not yet commercialized any drug candidates and cannot be sure that we will ever be able to do so, or that we may ever become profitable.

Our stockholders may not realize a benefit from the purchase of intellectual property commensurate with the associated ownership dilution experienced.

In May 2011, we completed the acquisition of certain assets used in or generated under or in connection with the discovery, development, manufacture and marketing of intellectual property and products based on the field of isoflavonoid technology and on compounds known as isoflavones, including those related to the drug candidates ME-143 and ME-344 (the "Isoflavone-related Assets"), from Novogen. Additionally, in August 2012, we completed the acquisition of certain assets and intellectual property, including those related to Pracinostat, from S*Bio.

If we are unable to realize the expected strategic and financial benefits from the purchase of intellectual property, our stockholders may experience substantial dilution of their ownership interest upon the conversion of the Series A Convertible Preferred Stock issued to Novogen to acquire the Isoflavone-related Assets, which may be converted at any time and from time to time without the payment of any additional consideration, and as a result of the issuance of shares of common stock to S*Bio to acquire certain assets and intellectual property, including those related to Pracinostat, without receiving any commensurate benefit. Upon consummation of the Isoflavone Transaction, we issued to Novogen 1,000 shares of our Series A Convertible Preferred Stock which are initially convertible into an aggregate of 4,827,000 shares of our common stock. In addition, upon our achievement of certain development milestones relating to the Isoflavone-related Assets, the aggregate number of shares into which the Series A Convertible Preferred Stock may be converted would increase to 9,654,000. Although in the Isoflavone Asset Purchase Agreement Novogen made certain representations and warranties regarding its intellectual property rights in respect of the Isoflavone-related Assets, Novogen's indemnification obligations, which were limited and payable solely by the forfeiture of our securities issued as consideration in the Isoflavone Transaction, expired on June 30, 2011. Similarly, in the asset purchase agreement relating to the acquisition of certain assets and intellectual property from S*BIO, S*BIO made certain representations and warranties regarding its intellectual property rights to such assets; however, its indemnification obligations with respect to such representations and warranties are limited.

Accordingly, we do not expect to be adequately compensated, if at all, for the loss of any such intellectual property rights acquired in the Isoflavone Transaction or in the acquisition from S*Bio.

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.

Pre-clinical studies and Phase I and Phase II clinical trials are not primarily designed to test the efficacy of a drug candidate, but rather to test safety, to study pharmacokinetics and pharmacodynamics, and to understand the drug candidate's side effects at various doses and schedules. Favorable results in early studies or trials may not be repeated in later studies or trials, including continuing pre-clinical studies and large-scale Phase III clinical trials, and our drug candidates in later-stage trials may fail to show desired safety and efficacy despite having progressed through earlier-stage trials. Unfavorable results from ongoing pre-clinical studies or clinical trials could result in delays, modifications or abandonment of ongoing or future clinical trials, or abandonment of a clinical program. Pre-clinical and clinical results are frequently susceptible to varying interpretations that may delay, limit or prevent regulatory approvals or commercialization. Negative or inconclusive results or adverse medical events during a clinical trial could cause a clinical trial to be delayed, repeated or terminated, or a clinical program to be abandoned.

Final approval by regulatory authorities of our drug candidates for commercial use may be delayed, limited or prevented, any of which would adversely affect our ability to generate operating revenues.

We will not generate any operating revenue until we successfully license or commercialize one of our drug candidates. Currently, we have drug candidates at different stages of development, and each will need to successfully complete a number of studies and obtain regulatory approval before potential commercialization.

In particular, any of the following factors may serve to delay, limit or prevent the final approval by regulatory authorities of our drug candidates for commercial use:

- ME-143, ME-344 and Pracinostat are in the early stages of development, and we will need to conduct significant clinical testing to demonstrate safety and efficacy of these drug candidates before applications for marketing can be filed with the FDA, or with the regulatory authorities of other countries;
- data obtained from pre-clinical and clinical studies can be interpreted in different ways, which could delay, limit or prevent regulatory approval;
- development and testing of product formulation, including identification of suitable excipients, or chemical additives intended to facilitate delivery of our drug candidates;
- it may take us many years to complete the testing of our drug candidates, and failure can occur at any stage of this process; and
- negative or inconclusive results or adverse medical events during a clinical trial could cause us to delay or terminate our development efforts.

The successful development of any of these drug candidates is uncertain and, accordingly, we may never commercialize any of these drug candidates or generate revenue.

Even if we receive regulatory approval to commercialize our drug candidates, our ability to generate revenues from any resulting products will be subject to a variety of risks, many of which are out of our control.

Even if our drug candidates obtain regulatory approval, resulting products may not gain market acceptance among physicians, patients, healthcare payers or the medical community. We believe that the degree of market acceptance and our ability to generate revenues from such products will depend on a number of factors, including:

- timing of market introduction of our drugs and competitive drugs;
- actual and perceived efficacy and safety of our drug candidates;
- prevalence and severity of any side effects;
- potential or perceived advantages or disadvantages over alternative treatments;
- strength of sales, marketing and distribution support;
- price of our future products, both in absolute terms and relative to alternative treatments;
- the effect of current and future healthcare laws on our drug candidates; and
- availability of coverage and reimbursement from government and other third-party payers.

If any of our drugs are approved and fail to achieve market acceptance, we may not be able to generate significant revenue to achieve or sustain profitability.

We may not be able to establish the contractual arrangements necessary to develop, market and distribute our product candidates.

A key part of our business plan is to establish contractual relationships with third parties to package, market and distribute our product candidates. Potential partners may be discouraged by our limited operating history. Similarly, potential counterparties may not wish to enter into agreements with us due to Novogen's current equity position as our majority stockholder. There is no assurance that we will be able to negotiate commercially acceptable licensing or other agreements for the future exploitation of our drug product candidates, including continued clinical development, manufacture or marketing. If we are unable to successfully contract for these services, or if arrangements for these services are terminated, we may have to delay our commercialization program which will adversely affect our ability to generate operating revenues.

Our commercial opportunity will be reduced or eliminated if competitors develop and market products that are more effective, have fewer side effects or are less expensive than our drug candidates.

The development of drug candidates is highly competitive. A number of other companies have products or drug candidates in various stages of pre-clinical or clinical development that are intended for the same therapeutic indications for which our drug candidates are being developed. Some of these potential competing drugs are further advanced in development than our drug candidates and may be commercialized sooner. Even if we are successful in developing effective drugs, our compounds may not compete successfully with products produced by our competitors.

Our competitors include pharmaceutical companies and biotechnology companies, as well as universities and public and private research institutions. In addition, companies active in different but related fields represent substantial competition for us. Many of our competitors developing oncology drugs have significantly greater capital resources, larger research and development staffs and facilities and greater experience in drug development, regulation, manufacturing and marketing than we do. These organizations also compete with us and our service providers, to recruit qualified personnel, and with us to attract partners for joint ventures and to license technologies that are competitive with us. As a result, our competitors may be able to more easily develop technologies and products that would render our technologies or our drug candidates obsolete or non-competitive.

We rely on third parties to conduct our clinical trials and many of our pre-clinical studies. If those parties do not successfully carry out their contractual duties or meet expected deadlines, our drug candidates may not advance in a timely manner or at all.

In the course of our discovery, pre-clinical testing and clinical trials, we rely on third parties, including laboratories, investigators, clinical contract research organizations, or CROs, and manufacturers, to perform critical services for us. For example, we rely on third parties to conduct our clinical trials and many of our pre-clinical studies. CROs are responsible for many aspects of the trials, including finding and enrolling subjects for testing and administering the trials. Although we rely on these third parties to conduct our clinical trials, we are responsible for ensuring that each of our clinical trials is conducted in accordance with its investigational plan and protocol. Moreover, the FDA and foreign regulatory authorities require us to comply with regulations and standards, commonly referred to as good clinical practices, or GCPs, for conducting, monitoring, recording, and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate, and that the trial subjects are adequately informed of the potential risks of participating in clinical trials. Our reliance on third parties does not relieve us of these responsibilities and requirements. These third parties may not be available when we need them or, if they are available, may not comply with all regulatory and contractual requirements or may not otherwise perform their services in a timely or acceptable manner, and we may need to enter into new arrangements with alternative third parties and our clinical trials may be extended, delayed or terminated. These independent third parties may also have relationships with other commercial entities, some of which may compete with us. In addition, if such third parties fail to perform their obligations in compliance with

our clinical trial protocols or GCPs, our clinical trials may not meet regulatory requirements or may need to be repeated. As a result of our dependence on third parties, we may face delays or failures outside of our direct control. These risks also apply to the development activities of collaborators, and we do not control their research and development, clinical trial or regulatory activities.

We have no direct control over the cost of manufacturing our drug candidates. Increases in the cost of manufacturing our drug candidates would increase our costs of conducting clinical trials and could adversely affect our future profitability.

We do not intend to manufacture our drug product candidates ourselves, and we will rely on third parties for our drug supplies both for clinical trials and for commercial quantities in the future. We have taken the strategic decision not to manufacture active pharmaceutical ingredients ("API") for our drug candidates, as these can be more economically supplied by third parties with particular expertise in this area. We have identified contract facilities that are registered with the FDA, have a track record of large scale API manufacture, and have already invested in capital and equipment. We have no direct control over the cost of manufacturing our product candidates. If the cost of manufacturing increases, or if the cost of the materials used increases, these costs will be passed on to us, making the cost of conducting clinical trials more expensive. Increases in manufacturing costs could adversely affect our future profitability if we are unable to pass all of the increased costs along to our customers.

We face a risk of product liability claims and may not be able to obtain adequate insurance.

Our business exposes it to the risk of product liability claims. This risk is inherent in the manufacturing, testing and marketing of human therapeutic products. We have product liability insurance coverage of $5 million. The coverage is subject to deductibles and coverage limitations. We may not be able to obtain or maintain adequate protection against potential liabilities, or claims may exceed our insurance limits. If we cannot or do not sufficiently insure against potential product liability claims, we may be exposed to significant liabilities, which may materially and adversely affect our business development and commercialization efforts.

Our financial results are affected by fluctuations in currency exchange rates.

A portion of our expenditures and potential revenue may be spent or derived outside of the United States. As a result, fluctuations between the U.S. dollar and the currencies of the countries in which we operate may increase our costs or reduce our potential revenue. At present, we do not engage in hedging transactions to protect against uncertainty in future exchange rates between particular foreign currencies and the U.S. dollar.

Risks Related to Securities Markets and Investment in Our Stock

The trading price of the shares of our common stock has been and may continue to be highly volatile and could decline in value and we may incur significant costs from class action litigation.

The trading price of our common stock could be highly volatile in response to various factors, many of which are beyond our control, including:

- failure to successfully develop drug candidates ME-143, ME-344 and Pracinostat;
- announcements of technological innovations by us or our competitors;
- new products introduced or announced by us or our competitors;
- changes in financial estimates by securities analysts;
- actual or anticipated variations in operating results;
- expiration or termination of licenses, research contracts or other collaboration agreements;

- conditions or trends in the regulatory climate and the biotechnology, pharmaceutical and genomics industries;
- instability in the stock market as a result of current global events;
- changes in the market valuations of similar companies;
- the liquidity of any market for our securities;
- additional sales by us of shares of our common stock; and
- threatened or actual delisting of our common stock from a national stock exchange.

Equity markets in general, and the market for biotechnology and life sciences companies in particular, have experienced substantial price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of companies traded in those markets. In addition, changes in economic conditions in the U.S., Europe or globally, particularly in the context of current global events, could impact upon our ability to grow profitably. Adverse economic changes are outside our control and may result in material adverse impacts on our business or our results of operations. These broad market and industry factors may materially affect the market price of shares of our common stock, regardless of our development and operating performance. In the past, following periods of volatility in the market price of a company's securities, securities class-action litigation has often been instituted against that company. Such litigation, if instituted against us, could cause us to incur substantial costs and divert management's attention and resources.

In addition, if the market price of our common stock remains below $5.00 per share, under stock exchange rules, our stockholders will not be able to use such shares as collateral for borrowing in margin accounts. Further, certain institutional investors are restricted from investing in shares priced below $5.00. This inability to use shares of our common stock as collateral and the inability of certain institutional investors to invest in our shares may depress demand and lead to sales of such shares creating downward pressure on and increased volatility in the market price of our common stock.

Because we do not intend to pay, and have not paid, any cash dividends on our shares of common stock, our stockholders will not be able to receive a return on their shares unless the value of our common stock appreciates and they sell their shares.

We have never paid or declared any cash dividends on our common stock, and we intend to retain any future earnings to finance the development and expansion of our business. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. Therefore, our stockholders will not be able to receive a return on their investment unless the value of our common stock appreciates and they sell their shares.

Our common stock may be delisted from Nasdaq.

Under Nasdaq rules, companies listed on the Nasdaq Capital Market are required to maintain a share price of at least $1.00 per share and if the share price declines below $1.00 for a period of 30 consecutive business days, then the listed company would have 180 days to regain compliance with the $1.00 per share minimum. On March 27, 2012, we received notice from Nasdaq stating that, based on the closing bid price for the Company's common stock for the last 30 consecutive business days, we no longer meet the $1.00 per share minimum bid price requirement for continued inclusion on the Nasdaq Capital Market. The notification letter states that we will be afforded a grace period of 180 calendar days, or until September 24, 2012, to regain compliance with the minimum bid price requirement. In order to regain compliance, shares of our common stock must maintain a minimum closing bid price of at least $1.00 per share for a minimum of ten consecutive business days during the grace period. We will not regain compliance during the initial 180 calendar day grace period; however, we may be eligible for additional time to demonstrate compliance with the minimum bid price requirement if we continue to meet certain other Nasdaq listing requirements. In the event that our share price remains below $1.00, we may

be required to take action, such as a reverse stock split, in order to comply with the Nasdaq rules that may be in effect at the time.

In addition, under Nasdaq rules, we are required to maintain minimum stockholders' equity of $2.5 million. If our stockholders' equity falls below $2.5 million, we would have 45 calendar days from the date of notification by Nasdaq to submit a plan to regain compliance. If the plan is accepted, Nasdaq can grant an extension of up to 180 calendar days from the date of the original notification for us to evidence compliance with this requirement.

If we are not able to comply with the listing standards of the Nasdaq Capital Market, our common stock will be delisted from Nasdaq and an associated decrease in liquidity in the market for our common stock will occur.

We will have broad discretion over the use of the net proceeds from any exercise of outstanding warrants.

We will have broad discretion to use the net proceeds to us upon any exercise of outstanding warrants, and investors in our stock will be relying on the judgment of our board of directors and management regarding the application of these proceeds. Although we expect to use a substantial portion of the net proceeds from any exercise of the warrants for general corporate purposes and progression of our clinical trial program, we have not allocated these net proceeds for specific purposes.

We are authorized to issue blank check preferred stock, which could adversely affect the holders of our common stock.

Our restated certificate of incorporation allows us to issue blank check preferred stock with rights potentially senior to those of our common stock without any further vote or action by the holders of our common stock. Although our Series A Convertible Preferred Stock, our only outstanding preferred stock, does not contain dividend or voting preferences. the issuance of a class of preferred stock could decrease the amount of earnings and assets available for distribution to the holders of our common stock or could adversely affect the rights and powers, including voting rights, of such holders. In certain circumstances, such issuance could have the effect of decreasing the market price of our shares, or making a change in control of us more difficult.

Laws, rules and regulations relating to public companies may be costly and impact our ability to attract and retain directors and executive officers.

Laws and regulations affecting public companies, including rules adopted by the SEC and by Nasdaq, may result in increased costs to us. These laws, rules and regulations could make it more difficult or costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, on our board committees or as executive officers. We cannot estimate accurately the amount or timing of additional costs we may incur to respond to these laws, rules and regulations.

Our executive officers and directors may sell shares of their stock, and these sales could adversely affect our stock price.

Sales of our stock by our executive officers and directors, or the perception that such sales may occur, could adversely affect the market price of our stock. Our executive officers and directors may sell stock in the future, either as part, or outside, of trading plans under Securities and Exchange Commission, or SEC, Rule 10b5-1.

Risks Relating to Our Intellectual Property

Our commercial success is dependent, in part, on obtaining and maintaining patent protection and preserving trade secrets, which cannot be guaranteed.

Patent protection and trade secret protection are important to our business and our future will depend, in part on our ability maintain trade secret protection, obtain patents and operate without infringing the proprietary rights

of others both in the United States and abroad. Litigation or other legal proceedings may be necessary to defend against claims of infringement, to enforce our patents or to protect our trade secrets. Such litigation could result in substantial costs and diversion of our management's attention.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions. Prior to the Isoflavone Transaction, Novogen had applied for patents in a number of countries with respect to the use of their isoflavone compounds, including Phenoxodiol, Triphendiol, ME-143, NV-128 and ME-344, for the treatment, prevention or cure of cancer and methods of production of Phenoxodiol. We acquired both issued patents and pending patent applications from Novogen in relation to these technologies, which we previously licensed from Novogen. Additionally, in August 2012 we acquired patents and patent applications related to Pracinostat from S*Bio. The patent applications may not proceed to grant or may be amended to reduce the scope of protection of any patent granted. The applications and patents may also be opposed or challenged by third parties. Our commercial success will depend, in part, on our ability to obtain and maintain effective patent protection for our compounds and their use in treating, preventing, or curing cancer, and to successfully defend patent rights in those technologies against third-party challenges. As patent applications in the United States are maintained in secrecy until published or issued and as publication of discoveries in the scientific or patent literature often lag behind the actual discoveries, we cannot be certain that Novogen was the first to make the inventions covered by its pending patent applications or issued patents that we acquired or that it was the first to file patent applications for such inventions. Additionally, the breadth of claims allowed in biotechnology and pharmaceutical patents or their enforceability cannot be predicted. We cannot be sure that, should any patents issue, we will be provided with adequate protection against potentially competitive products. Furthermore, we cannot be sure that should patents issue, they will be of commercial value to us, or that private parties, including competitors, will not successfully challenge our patents or circumvent our patent position in the United States or abroad.

Claims by other companies that we infringe on their proprietary technology may result in liability for damages or stop our development and commercialization efforts.

The pharmaceutical industry is highly competitive and patents have been applied for by, and issued to, other parties relating to products competitive with the compounds that we have acquired. Therefore, ME-143, ME-344, Pracinostat and any other drug candidates may give rise to claims that they infringe the patents or proprietary rights of other parties existing now and in the future.

Furthermore, to the extent that we or our consultants or research collaborators use intellectual property owned by others in work performed for us, disputes may also arise as to the rights in such intellectual property or in resulting know-how and inventions. An adverse claim could subject us to significant liabilities to such other parties and/or require disputed rights to be licensed from such other parties.

We have contracted formulation development and manufacturing process development work for our product candidates. This process has identified a number of excipients, or additives to improve drug delivery, which may be used in the formulations. Excipients, among other things, perform the function of a carrier of the active drug ingredient. Some of these identified excipients or carriers may be included in third party patents in some countries. We intend to seek a license if we decide to use a patented excipient in the marketed product or we may choose one of those excipients that does not have a license requirement.

We cannot be sure that any license required under any such patents or proprietary rights would be made available on terms acceptable to us, if at all. If we do not obtain such licenses, we may encounter delays in product market introductions, or may find that the development, manufacture or sale of products requiring such licenses may be precluded. We have not conducted any searches or made any independent investigations of the existence of any patents or proprietary rights of other parties.

We may be subject to substantial costs stemming from our defense against third-party intellectual property infringement claims.

Third parties may assert that we are using their proprietary information without authorization. Third parties may also have or obtain patents and may claim that technologies licensed to or used by us infringe their patents. If we are required to defend patent infringement actions brought by third parties, or if we sue to protect our own patent rights, we may be required to pay substantial litigation costs and managerial attention may be diverted from business operations even if the outcome is not adverse to us. In addition, any legal action that seeks damages or an injunction to stop us from carrying on our commercial activities relating to the affected technologies could subject us to monetary liability and require us or any third party licensors to obtain a license to continue to use the affected technologies. We cannot predict whether we would prevail in any of these types of actions or that any required license would be made available on commercially acceptable terms or at all.

Risks Related to our Relationship with Novogen

As our majority stockholder, Novogen has the ability to determine the outcome of matters submitted to our stockholders for approval, and Novogen's interests may conflict with our or our other stockholders' interests.

As of September 21, 2012, Novogen beneficially owned approximately 60% of our outstanding shares of common stock. In addition, Novogen owns 1,000 shares of our Series A Convertible Preferred Stock which are initially convertible into 4,827,000 shares of our common stock, which would increase Novogen's ownership percentage to approximately 67%. In addition, upon our achievement of certain development milestones relating to the Isoflavone-related Assets, the aggregate number of shares into which the Series A Convertible Preferred Stock may be converted would increase to 9,654,000, which would increase Novogen's ownership percentage to approximately 72%. As a result, Novogen will have the ability to effectively determine the outcome of all matters submitted to our stockholders for approval, including the election and removal of directors and any merger, consolidation or sale of all or substantially all of its assets.

Novogen will have the ability to effectively control our management and affairs. Novogen's interests may not always be the same as those of our other stockholders. In addition, this concentration of ownership may harm the market price of our securities by:

- delaying, deferring or preventing a change in control;
- impeding a merger, consolidation, takeover or other business combination involving us;
- discouraging a potential acquirer from making a tender, offer or otherwise attempting to obtain control of us; or
- selling us to a third party.

On July 27, 2012, Novogen announced that it had entered into a merger agreement with Kai Medical, a U.S.- based company, incorporated in Delaware. The agreement is subject to shareholder approval. In addition to the merger agreement with Kai Medical, Novogen announced that, subject to shareholder approval, it will undertake a capital reduction and *in specie* distribution to the Novogen shareholders of the shares of the Company that it owns. Novogen has stated that this distribution will allow Novogen shareholders to own their proportionate share of the Company's common shares now held by Novogen. We cannot be certain that any such distribution will be made in accordance with Novogen's stated plans, or at all.

In the event that Novogen undergoes a change in control while remaining our controlling stockholder, or sells or distributes our shares, we may become subject to the control and influence of new controlling stockholders who may have views regarding the development of our business that differ from the development strategies we are currently pursuing, and Novogen may not continue to make investments in us or otherwise provide us with financial support.

Although Novogen has publicly announced plans to distribute its shares of the Company's common stock to Novogen shareholders, subject to shareholder approval, in the event that Novogen undergoes a change in control

while remaining our controlling stockholder, we will become subject to the control and influence of Novogen's new controlling stockholder who will have the ability to indirectly determine the outcome of all matters submitted to our stockholders for approval through its control of Novogen. This entity may have views regarding the development of our business that differ from the development strategies we are currently pursuing. Such controlling stockholder may cause Novogen to use its influence and voting power to change the direction in which we are developing our business. Such changes may include, but are not limited to, a decreased focus on the development of any of our current drug candidates and an increased focus on the development of alternative drug candidates, which may or may not be targeted to treat cancers.

In addition, Novogen has provided financial support to the Company from time to time, including the purchase of an aggregate of $4 million of our common stock in the second half of calendar year 2011 and an additional $4 million of common stock and warrants in connection with our rights offering that was completed in May 2012. In the event Novogen effects the proposed distribution of its shares of our common stock to its shareholders, Novogen may not continue to make investments in us or otherwise provide financial support.

One of our directors is the Chairman of the Board of Novogen Limited, which may create a conflict of interest as well as prevent him from devoting his full attention to us.

One of our board members, Mr. William Rueckert, currently serves as the Chairman of the Board of Novogen, our majority shareholder. Simultaneous service as a Novogen director could create, or appear to create, a conflict of interest when such director is presented with decisions that could have different implications for us and Novogen. His responsibilities could prevent him from devoting his full attention to us, which could be harmful to the development of our business.

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 of failure, and may not produce successful results;
- 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 the clinical development programs and/or receipt of FDA or other required governmental approvals, or the failure to obtain such approvals, for our product candidates;

- 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 and the receipt of regulatory approvals;
- 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.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of our common stock by the selling stockholder pursuant to this prospectus.

SELLING STOCKHOLDER

The shares of common stock being offered by the selling stockholder are those issued to the selling stockholder on August 22, 2012 upon the closing under the Asset Purchase Agreement (the “Initial Shares”), as well as those shares of common stock (the “Milestone Payment Shares” and, together with the Initial Shares, the “Shares”) that may be issuable to the selling stockholder upon the achievement of the first clinical and regulatory milestone (the “First Milestone”) pursuant to the terms of the Asset Purchase Agreement. In connection with the Asset Purchase Agreement, we also entered into a registration rights agreement, dated as of August 22, 2012 (the “Registration Rights Agreement”) with S*Bio. Pursuant to the terms of the Registration Rights Agreement, we granted to S*Bio certain registration rights related to the shares of common stock issued under the Asset Purchase Agreement, including the shares that may be issuable upon achievement of the First Milestone. This registration statement is being filed pursuant to the Registration Rights Agreement.

We are registering the Shares in order to permit the selling stockholder to offer such Shares for resale from time to time. Except for the ownership of the Initial Shares issued pursuant to the Asset Purchase Agreement, the selling stockholder has not had any material relationship with us within the past three years.

The table below lists the selling stockholder and other information regarding the beneficial ownership (as determined under Section 13(d) of the Exchange Act and the rules and regulations thereunder) of the shares of common stock held by the selling stockholder. The term "selling stockholder" also includes any transferees, pledgees, donees, or other successors in interest to the selling stockholder named in the table below. Any changes to the selling stockholder information and the names of any transferees, pledgees, donees and other successors in interest will be set forth in supplements to this prospectus as necessary. The third column lists the percentage of shares of common stock beneficially owned by the selling stockholder, based on its ownership of shares of common stock as of September 21, 2012. The percentage of shares beneficially owned prior to the offering is based on 21,673,482 shares of our common stock outstanding as of September 21, 2012. The number of shares in the column "Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus" represents all of the shares that the selling stockholder may offer under this prospectus.

In accordance with the terms of the Registration Rights Agreement, this prospectus generally covers the resale of the Initial Shares as well as the maximum number of Milestone Payment Shares. Under the terms of the Asset Purchase Agreement, upon the achievement of the First Milestone, we may not a issue Milestone Payment Shares to the extent such issuance would require us to obtain shareholder approval for such issuance and such approval has not previously been obtained; in such event, the Milestone Payment will be payable in cash.

The selling stockholder may sell all, some or none of its shares in this offering. See "Plan of Distribution."

Name of Selling Stockholder	Number of Shares of Common Stock Owned Prior to Offering	% of Shares of Common Stock Owned Prior to Offering	Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus	Number of Shares of Common Stock Owned After Offering	% of Shares of Common Stock Owned After Offering
S*Bio Pte Ltd(1) 250 North Bridge Rd #28-00 Raffles City Tower, Singapore 17910	1,174,536(2)	5.40%	2,565,000(3)	0(4)	—%(4)

(1) S*Bio Pte Ltd. is a Singapore private limited company whose board of directors has sole voting and investment control over the shares included in this prospectus. The members of the board of directors of S*Bio are: Choo Heng Tong and Jean-Philippe Jacques Tripet, and each of their addresses is as set forth above for S*Bio. Neither S*Bio nor any board member is affiliated with a registered broker dealer.

(2) Shares of common stock issued to S*Bio upon the closing, on August 22, 2012, under the terms of the Asset Purchase Agreement.

(3) Includes 1,174,536 shares of common stock issued to S*Bio upon the closing, on August 22, 2012, under the terms of the Asset Purchase Agreement, as well as a maximum of 1,390,464 shares of common stock that may be issuable upon our achievement of the First Milestone under the terms of the Asset Purchase Agreement, as described above.

(4) The number of shares shown in this column assumes that (i) all of the shares of common stock issued at the closing under the Asset Purchase Agreement and (ii) all of the shares of common stock issuable upon achievement of the First Milestone under the Asset Purchase Agreement are sold in this offering.

PLAN OF DISTRIBUTION

We are registering the Shares to permit the resale of these shares of common stock by the selling stockholder from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholder of the Shares. We will bear all fees and expenses incident to our obligation to register the Shares.

The selling stockholder may sell all or a portion of the Shares held by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the Shares are sold through underwriters or broker-dealers, the selling stockholder will be responsible for underwriting discounts or commissions or agents' commissions. The Shares may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, pursuant to one or more of the following methods:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- agreements between broker-dealers and the selling stockholder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholder may also sell the Shares under Rule 144 promulgated under the Securities Act, if available, rather than under this prospectus. In addition, the selling stockholder may transfer the Shares by other means not described in this prospectus. If the selling stockholder effects such transactions by selling Shares to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholder or commissions from purchasers of the Shares for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the Shares or otherwise, the selling stockholder may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the Shares in the course of hedging in positions they assume. The selling stockholder may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholder may also loan or pledge the Shares to broker-dealers that in turn may sell such shares.

The selling stockholder may pledge or grant a security interest in some or all of the Shares owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the Shares from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholder also may transfer and donate the Shares in other circumstances in which case

the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

To the extent required by the Securities Act and the rules and regulations thereunder, the selling stockholder and any broker-dealer participating in the distribution of the Shares may be deemed to be "underwriters" within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the Shares is made, a prospectus supplement, if required, will be distributed, which will set forth the aggregate amount of Shares being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholder and any discounts, commissions or concessions allowed or re-allowed or paid to broker-dealers.

Under the securities laws of some states, the Shares may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the Shares may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the Shares registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the Shares by the selling stockholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the Shares to engage in market-making activities with respect to the Shares. All of the foregoing may affect the marketability of the Shares and the ability of any person or entity to engage in market-making activities with respect to the Shares.

Pursuant to the Registration Rights Agreement, we agreed to file, within 30 days of the August 22, 2012 closing under the Asset Purchase Agreement (the "Filing Deadline"), a registration statement with the SEC registering the Shares for resale. In addition, we agreed to use our commercially reasonable efforts to cause such registration statement to be declared effective on or before the 90th calendar day following the closing date and to maintain the effectiveness of such registration statement, other than during certain permitted grace periods, until the earlier of (i) the date as of which all holders of the Shares may sell such Shares to the public without restriction pursuant to Rule 144(b)(1) (or the successor rule thereto) promulgated under the Securities Act, (ii) the date when all of the Shares have been sold pursuant to the registration statement of which this prospectus forms a part or pursuant to Rule 144 under the Securities Act, or (iii) the one-year anniversary of the closing dated under the Asset Purchase Agreement, or August 22, 2013.

We will pay all expenses of the registration of the shares of common stock pursuant to the Registration Rights Agreement, estimated to be $21,112 in total, including, without limitation, SEC filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, that the selling stockholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the selling stockholder against liabilities, including some liabilities under the Securities Act in accordance with the Registration Rights Agreement, or the selling stockholder will be entitled to contribution. We may be indemnified by the selling stockholder against certain liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the selling stockholder specifically for use in this prospectus, in accordance with the Registration Rights Agreement or we may be entitled to contribution.

Once sold under the registration statement of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

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, 2012 and 2011, and for each of the two years in the period ended June 30, 2012, incorporated by reference into 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 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 or any subsequently filed document that is incorporated by reference into this prospectus modifies or supersedes that statement. The modified or superseded statement will not be considered to be a part of this prospectus, except as modified or superseded.

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

- our Annual Report on Form 10-K for the fiscal year ended June 30, 2012;
- our Current Reports on Form 8-K filed with the SEC on July 2, 2012, August 8, 2012 and August 23, 2012; 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 of which this prospectus forms a part and prior to effectiveness of the registration statement and (ii) the date of this prospectus and prior to the termination of this offering; provided, however, that we are not incorporating any information furnished under Item 2.02 or Item 7.01 of any current report on Form 8-K we may subsequently file.

Statements made in this prospectus in any document incorporated by reference in this prospectus 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.

SEC registration fee	$ 112
Printing and engraving fees	2,000
Legal fees	15,000
Accounting fees	2,000
Miscellaneous	2,000
Total	$21,112

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) If the registrant is relying on Rule 430B:

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

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

securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is 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; or

(ii) If the registration is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statement relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, 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 date of first use.

(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 21st day of September, 2012.

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 September 21, 2012.

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/ Bryan R.G. Williams Bryan R.G. Williams	Chairman of Board of Directors
/s/ William D. Rueckert William D. Rueckert	Director
/s/ Christine A. White Christine A. White	Director
/s/ Leah R. Cann Leah R. Cann	Director
/s/ Charles V. Baltic III Charles V. Baltic III	Director

Exhibit Number	Description of Document
4.1	Specimen of Common Stock Certificate.
5.1	Opinion of Morgan, Lewis & Bockius LLP regarding legality of securities being registered.
10.1	Asset Purchase Agreement, dated as of August 7, 2012, between MEI Pharma, Inc. and S*Bio Pte Ltd. (1)
10.2	Registration Rights Agreement, dated as of August 22, 2012, between MEI Pharma, Inc. and S*Bio Pte Ltd. (1)
23.1	Consent of BDO USA, LLP.
23.2	Consent of Morgan, Lewis & Bockius LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page).

(1) Incorporated by reference from the registrant's Current Report on Form 8-K filed with the SEC on August 8, 2012.

Exhibit 4.1

016570| 003590|127C|RESTRICTED||4|057-423

MEI pharma

PO BOX 43004, Providence, RI 02940-3004

MR A SAMPLE
DESIGNATION (IF ANY)
ADD 1
ADD 2
ADD 3
ADD 4

CUSIP XXXXXX XX X
Holder ID XXXXXXXXXX
Insurance Value
Number of Shares 1,000,000.00
DTC 12345678 1234567890123456

Certificate Numbers	Num/No.	Denom.	Total
1234567890/1234567890	1	1	1
1234567890/1234567890	2	2	2
1234567890/1234567890	3	3	3
1234567890/1234567890	4	4	4
1234567890/1234567890	5	5	5
1234567890/1234567890	6	6	6
Total Transaction			7

COMMON STOCK
PAR VALUE $0.00000002

COMMON STOCK
THIS CERTIFICATE IS TRANSFERABLE IN CANTON, MA AND NEW YORK, NY

Certificate Number
ZQ 000000

Shares
000000****
000000**
****000000****
*****000000***
******000000**

MEI PHARMA, INC.

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

THIS CERTIFIES THAT

MR. SAMPLE & MRS. SAMPLE &
MR. SAMPLE & MRS. SAMPLE

CUSIP 55279B 10 3
SEE REVERSE FOR CERTAIN DEFINITIONS

is the owner of

***ZERO HUNDRED THOUSAND
ZERO HUNDRED AND ZERO***

FULLY-PAID AND NON-ASSESSABLE SHARES OF THE COMMON STOCK OF

MEI Pharma, Inc. (hereinafter called the "Company"), transferable on the books of the Company in person or by duly authorized attorney, upon surrender of this Certificate properly endorsed. This Certificate and the shares represented hereby, are issued and shall be held subject to all of the provisions of the Restated Certificate of Incorporation, as amended, and the By-Laws, as amended, of the Company (copies of which are on file with the Company and with the Transfer Agent), to all of which each holder, by acceptance hereof, assents. This Certificate is not valid unless countersigned and registered by the Transfer Agent and Registrar.

Witness the facsimile seal of the Company and the facsimile signatures of its duly authorized officers.

President and CEO

Secretary

MEI Pharma, Inc
SEAL
2020
DELAWARE

DATED <<Month Day, Year>>

COUNTERSIGNED AND REGISTERED:
COMPUTERSHARE TRUST COMPANY, N.A.
TRANSFER AGENT AND REGISTRAR,

By _____
AUTHORIZED SIGNATURE

SECURITY INSTRUCTIONS ON REVERSE

1234567

MEI PHARMA, INC.

THE BOARD OF DIRECTORS MAY REQUIRE THE OWNER OF A LOST OR DESTROYED STOCK CERTIFICATE, OR HIS LEGAL REPRESENTATIVES, TO GIVE THE COMPANY A BOND TO INDEMNIFY IT AND ITS TRANSFER AGENTS AND REGISTRARS AGAINST ANY CLAIM THAT MAY BE MADE AGAINST THEM ON ACCOUNT OF THE ALLEGED LOSS OR DESTRUCTION OF ANY SUCH CERTIFICATE.

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM	- as tenants in common	UNIF GIFT MIN ACT	-.....(Cust).....Custodian.....(Minor)..... under Uniform Gifts to Minors Act.....(State).....
TEN ENT	- as tenants by the entireties		
JT TEN	- as joint tenants with right of survivorship	UNIF TRF MIN ACT	-.....(Cust).....Custodian (until age .....) .....(Minor).....under Uniform Transfers to Minors Act .....(State).....

Additional abbreviations may also be used though not in the above list.

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

For value received, _____ hereby sell, assign and transfer unto

_____

(PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS, INCLUDING POSTAL ZIP CODE, OF ASSIGNEE)

_____

_____

_____ Shares

of the capital stock represented by the within Certificate, and do hereby irrevocably constitute and appoint

_____ Attorney

to transfer the said stock on the books of the within-named Corporation with full power of substitution in the premises.

Dated: _____ 20 _____

Signature: _____

Signature: _____

Notice: The signature to this assignment must correspond with the name as written upon the face of the certificate, in every particular, without alteration or enlargement, or any change whatever.

Signature(s) Guaranteed: Medallion Guarantee Stamp

THE SIGNATURE(S) SHOULD BE GUARANTEED BY AN ELIGIBLE GUARANTOR INSTITUTION (Banks, Stockbrokers, Savings and Loan Associations and Credit Unions) WITH MEMBERSHIP IN AN APPROVED SIGNATURE GUARANTEE MEDALLION PROGRAM, PURSUANT TO S.E.C. RULE 17Ad-15.

SECURITY INSTRUCTIONS

THIS IS WATERMARKED PAPER. DO NOT ACCEPT WITHOUT NOTING WATERMARK. HOLD TO LIGHT TO VERIFY WATERMARK.

The IRS requires that we report the cost basis of certain shares acquired after January 1, 2011. If your shares were covered by the legislation and you have sold or transferred the shares and requested a specific cost basis calculation method, we have processed as requested. If you did not specify a cost basis calculation method, we have defaulted to the first in, first out (FIFO) method. Please visit our website or consult your tax advisor if you need additional information about cost basis.

If you do not keep in contact with us or do not have any activity in your account for the time periods specified by state law, your property could become subject to state unclaimed property laws and transferred to the appropriate state.

1234567

Exhibit 5.1

[Letterhead of Morgan, Lewis & Bockius LLP]

September 21, 2012

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 filing of a Registration Statement on Form S-3 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Act"), with the Securities and Exchange Commission (the "SEC"). The Registration Statement relates to the offering for resale, on a delayed or continuous basis, of 2,565,000 shares of the Company's common stock, $0.00000002 par value per share (the "Common Stock"), including 1,174,536 shares of Common Stock (the "Initial Shares") issued and 1,390,464 shares (the "Milestone Shares") of Common Stock that may be issuable upon the Company's achievement of certain clinical and regulatory milestones in accordance with the terms of the Asset Purchase Agreement (the "Asset Purchase Agreement"), dated August 7, 2012, between the Company and S*Bio Pte Ltd.

In connection with this opinion letter, we have examined the Registration Statement and originals, or copies certified or otherwise identified to our satisfaction, of the Restated Certificate of Incorporation, as amended, and Amended and Restated Bylaws of the Company, the Asset Purchase Agreement 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.

Based upon the foregoing, and subject to the qualifications, assumptions and limitations stated herein, we are of the opinion that:

1) the Initial Shares are validly issued, fully paid and nonassessable; and

2) the Milestone Shares have been duly authorized and, when issued in accordance with the terms of the Asset Purchase Agreement, will be validly issued, fully paid and nonassessable.

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.

We hereby consent to the use of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to us under the caption "Legal Matters" in the prospectus included in the Registration Statement. 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 SEC thereunder.

Very truly yours,

/s/ Morgan Lewis & Bockius LLP

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

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

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of our report dated September 17, 2012, relating to the consolidated financial statements of MEI Pharma, Inc., appearing in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2012, which are incorporated by reference in the Prospectus.

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

/s/ BDO USA, LLP
BDO USA, LLP
San Diego, California

September 21, 2012