

Prospectus Supplement No. 10
(to Prospectus dated March 26, 2012)

MEI PHARMA, INC.

2,915,152 Shares of Common Stock at \$1.19 Per Share

Upon Exercise of Outstanding Warrants

This prospectus amends and supplements the prospectus dated March 26, 2012 (the "Prospectus"), which forms a part of our Registration Statement on Form S-1 (Registration Statement No. 333-179590). This prospectus supplement is being filed to update and supplement the information included or incorporated by reference in the prospectus with the information contained in our Current Report on Form 8-K, filed with the Securities and Exchange Commission on October 4, 2012 (the "Form 8-K"). Accordingly, we have attached the Form 8-K to this prospectus supplement.

The prospectus and this prospectus supplement relate to (i) our distribution, at no charge, to holders of our common stock, \$0.00000002 par value per share (our "Common Stock"), as of 5:00 p.m., Eastern time, March 30, 2012 (the "Record Date"), of subscription rights (the "Rights"), to purchase up to 17,129,361 Units for an aggregate purchase price of up to \$7.6 million (the "Rights Offering") and (ii) the issuance of shares of Common Stock upon exercise of the Warrants (as defined below). The subscription period for the Rights Offering expired on May 11, 2012. Each Unit consisted of 0.50 shares of Common Stock and a warrant ("Warrant") representing the right to purchase 0.25 shares of Common Stock at an exercise price of \$1.19 per share. The exercise of one Right entitled holders to purchase one Unit at a subscription price of \$0.445 per Unit, which represents the subscription price of \$0.89 per whole share of Common Stock for two Units. In the Rights Offering, eligible participants exercised Rights to purchase 11,660,606 Units; accordingly, the Company issued 5,830,202 shares of Common Stock and Warrants to purchase an additional 2,915,152 shares of Common Stock. Gross proceeds of \$5.2 million were received in connection with the Rights Offering.

Our common stock is traded on the Nasdaq Capital Market under the symbol "MEIP". The Warrants will not trade on the Nasdaq Capital Market or any other securities exchange or trading market. On October 10, 2012, the closing price for a share of our Common Stock on the Nasdaq Capital Market was \$0.50 per share.

Investing in our Common Stock involves risks. See "Risk Factors" beginning on page 16 of the Prospectus to read about factors you should consider before you make your investment decision.

Neither the Securities and Exchange Commission nor any state securities commission 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 Supplement No. 10 is October 11, 2012

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

**Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): September 28, 2012

MEI Pharma, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

000-50484
(Commission
File Number)

51-0407811
(I.R.S. Employer
Identification No.)

11975 El Camino Real, Suite 101, San Diego, California 92130
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (858) 792-6300

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 1.01 Entry into a Material Definitive Agreement.

On September 28, 2012, MEI Pharma, Inc. (the “Company”) entered into a License Agreement (the “License Agreement”) with CyDex Pharmaceuticals, Inc. (“CyDex”). Under the License Agreement, CyDex granted to the Company an exclusive, nontransferable license to intellectual property rights relating to Captisol® for use with the Company’s two lead isoflavone-based drug compounds. Captisol has been shown to enhance the solubility, stability and bioavailability of drug formulations and is currently used in FDA approved drugs by several other pharmaceutical companies.

The Company will pay to CyDex a non-refundable license issuance fee. The Company has also agreed to make certain milestone payments to CyDex based on the achievement of certain clinical and regulatory milestones in each of the U.S., E.U. and Japan with respect to any compounds that have been developed using Captisol (“Licensed Products”). Certain milestone payments may become payable for multiple Licensed Products that are based on the same drug compound, while other milestone payments may only be paid a single time with respect to each family of Licensed Products based on the same drug compound. In the event the Company commercializes any Licensed Products, it will also pay CyDex a low, single-digit percentage rate royalty, on net sales of such products.

The License Agreement will continue in effect on a country-by-country basis until the later of (a) the fifth anniversary of the first commercial sale of a Licensed Product (anywhere in the world) or (b) the date as of which a license for the use of Captisol, as contemplated by the License Agreement, is no longer required in such country in order to avoid infringing applicable intellectual property rights. The Company may terminate the License Agreement for convenience at any time upon 90 days’ prior written notice to CyDex. Either party may also terminate the License Agreement upon the breach by the other party of any material term of the License Agreement which is not cured, upon notice, within 60 days (or 10 days with respect to any payment obligation).

Contemporaneously with the License Agreement, the Company and CyDex entered into a commercial supply agreement (the “Supply Agreement”) pursuant to which the Company agreed to purchase 100% of its requirements for Captisol from CyDex. The Supply Agreement will terminate on the earlier of the termination of the License Agreement in its entirety or 90 days after the Company provides CyDex with written notice of its intent to terminate the Supply Agreement. Either party may also terminate the Supply Agreement upon any breach by the other party of the Supply Agreement which is not cured, upon notice, within 60 days (or 10 days with respect to any payment obligation).

The Company expects to file each of the License Agreement and the Supply Agreement as an exhibit to its Quarterly Report on Form 10-Q for the quarter ending September 30, 2012, and intends to seek confidential treatment for certain terms and provisions of each of the License Agreement and the Supply Agreement. The foregoing descriptions are qualified in their entirety by reference to the text of the License Agreement and the Supply Agreement, as applicable, when filed.

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MEI PHARMA, INC.

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

Dated: October 4, 2012