

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

SCHEDULE 13D  
Under the Securities Exchange Act of 1934

(Amendment No. 5)

**MEI Pharma, Inc.**

(Name of Issuer)

**Common Stock, par value \$0.0000002 per share**

(Title of Class of Securities)

**572322402**

(CUSIP Number)

**Leo Kirby  
667 Madison Avenue, 21st Floor  
New York, NY 10065  
(212) 339-5633**

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

**December 20, 2013**

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box.

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7 for other parties to whom copies are to be sent.

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 (the "Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes)

**SCHEDULE 13D**

CUSIP No. 572322402

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<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS  Baker Bros. Advisors LP  13-4093645	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) <span style="float:right">(a) <input type="checkbox"/></span>  <span style="float:right">(b) <input type="checkbox"/></span>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (See Instructions)  OO	
<b>5</b>	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <span style="float:right"><input type="checkbox"/></span>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>		
<b>7</b>	SOLE VOTING POWER  746,521 (1)	
<b>8</b>	SHARED VOTING POWER  0	
<b>9</b>	SOLE DISPOSITIVE POWER  746,521 (1)	
<b>10</b>	SHARED DISPOSITIVE POWER  0	
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  746,521 (1)	
<b>12</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions) <span style="float:right"><input type="checkbox"/></span>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  3.4%(1)(2)	
<b>14</b>	TYPE OF REPORTING PERSON (See Instructions)  IA	

(1) Includes shares of common stock issuable upon exercise of the Warrant (as defined in Item 5 below), subject to the limitations on exercise described in Item 5 below.

(2) Based on 21,493,405 shares of common stock outstanding as of November 6, 2013, as reported in the Issuer's Form 10-Q filed with the SEC on November 8, 2013.

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<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS  Baker Bros. Advisors (GP) LLC  46-37147749	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) <span style="float:right">(a) <input type="checkbox"/></span> <span style="float:right">(b) <input type="checkbox"/></span>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (See Instructions)  OO	
<b>5</b>	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <span style="float:right"><input type="checkbox"/></span>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>	<b>7</b>	SOLE VOTING POWER  746,521 (1)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  746,521 (1)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  746,521 (1)	
<b>12</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions) <span style="float:right"><input type="checkbox"/></span>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  3.4%(1)(2)	
<b>14</b>	TYPE OF REPORTING PERSON (See Instructions)  IA	

(1) Includes shares of common stock issuable upon exercise of the Warrant (as defined in Item 5 below), subject to the limitations on exercise described in Item 5 below.

(2) Based on 21,493,405 shares of common stock outstanding as of November 6, 2013, as reported in the Issuer's Form 10-Q filed with the SEC on November 8, 2013.

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<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS  Julian C. Baker	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) <span style="float:right">(a) <input type="checkbox"/></span>  <span style="float:right">(b) <input type="checkbox"/></span>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (See Instructions)  OO	
<b>5</b>	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <span style="float:right"><input type="checkbox"/></span>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>	<b>7</b>	SOLE VOTING POWER  746,521 (1)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  746,521 (1)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  746,521 (1)	
<b>12</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions) <span style="float:right"><input type="checkbox"/></span>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  3.4%(1)(2)	
<b>14</b>	TYPE OF REPORTING PERSON (See Instructions)  IN, HC	

(1) Includes shares of common stock issuable upon exercise of the Warrant (as defined in Item 5 below), subject to the limitations on exercise described in Item 5 below.

(2) Based on 21,493,405 shares of common stock outstanding as of November 6, 2013, as reported in the Issuer's Form 10-Q filed with the SEC on November 8, 2013.

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<b>1</b>	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS  Felix J. Baker	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) <span style="float:right">(a) <input type="checkbox"/> (b) <input type="checkbox"/></span>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	SOURCE OF FUNDS (See Instructions)  OO	
<b>5</b>	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <span style="float:right"><input type="checkbox"/></span>	
<b>6</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>	<b>7</b>	SOLE VOTING POWER  746,521 (1)
	<b>8</b>	SHARED VOTING POWER  0
	<b>9</b>	SOLE DISPOSITIVE POWER  746,521 (1)
	<b>10</b>	SHARED DISPOSITIVE POWER  0
<b>11</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  746,521 (1)	
<b>12</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions) <span style="float:right"><input type="checkbox"/></span>	
<b>13</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  3.4%(1)(2)	
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(1) Includes shares of common stock issuable upon exercise of the Warrant (as defined in Item 5 below), subject to the limitations on exercise described in Item 5 below.

(2) Based on 21,493,405 shares of common stock outstanding as of November 6, 2013, as reported in the Issuer's Form 10-Q filed with the SEC on November 8, 2013.

### Amendment No. 5 to Schedule 13D

This Amendment No. 5 to Schedule 13D amends and supplements the previously filed Schedules 13D filed by Baker Bros. Advisors (GP) LLC (the “Adviser GP”), Baker Bros. Advisors LP (the “Adviser”, and together with the Advisor GP, Julian C. Baker and Felix J. Baker, the “Reporting Persons”), Julian C. Baker and Felix J. Baker. Except as set forth below, the Amendment No. 5 does not supplement, restate or amend any of the information disclosed in the Schedule 13D as previously filed.

Pursuant to the amended and restated management agreements, as amended, among the Adviser, Baker Brothers Life Sciences, L.P. (“Life Sciences”), 14159, L.P. (“14159”), and 667, L.P. (“667”, and together with Life Sciences and 14159, the “Funds”), and their respective general partners, the Adviser has complete and unlimited discretion and authority with respect to the Funds’ investments and voting power over investments.

#### Item 5. Interest in Securities of the Issuer.

Item 5 of this Schedule 13D is hereby amended and restated in its entirety as follows:

(a) and (b) Items 7 through 11 and 13 of each of the cover pages of this Schedule 13D are incorporated herein by reference. Set forth below is the aggregate number of shares of Common Stock of the Mei Pharma, Inc. (the “Issuer”) directly held by each of the Funds, which may be deemed to be indirectly beneficially owned by the Reporting Persons, as well as shares of Common Stock that may be acquired upon exercise of the Warrant (as defined below) at an exercise price of \$3.12 per share as of the date hereof by the Funds, subject to the limitation on exercise described below.

<u>Name</u>	<u>Number of Shares of Common Stock</u>	<u>Number of Shares Underlying Warrant</u>
667, L.P.	6,359	52,430
Baker Brothers Life Sciences, L.P.	39,145	632,450
14159, L.P.	1,017	15,120

Pursuant to the Warrants to Purchase Common Stock by each Fund dated November 4, 2012 (the “Warrant”), if at any time the beneficial ownership of the Funds and their affiliates exceeds 9.99% of the shares of Common Stock outstanding immediately after giving effect to the exercise of the Warrant, then the number of shares of common stock that may be acquired by the Funds and their affiliates upon any exercise of the Warrant will be limited to the extent necessary to ensure that, following such exercise, the total number of shares of common stock then beneficially owned by the Funds and their affiliates does not exceed 9.99% of the total number of then issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon exercise of the Warrant) (the “Maximum Percentage”). At any time that the Funds and their affiliates do not beneficially own in excess of the Maximum Percentage, the Funds may, by written notice to the Issuer, from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99% specified in such notice. Pursuant to the Warrant, any such increase will not be effective until the 61st day after such notice is delivered to the Issuer.

The Adviser GP, Felix J. Baker and Julian C. Baker as principals of the Adviser GP, and the Adviser may be deemed to be beneficial owners of securities of the Issuer directly held by the Funds, and may be deemed to have the power to vote or direct the vote of and the power to dispose or direct the disposition of such securities.

The Reporting Persons disclaim beneficial ownership of the securities held by each of the Funds, and this Schedule 13D shall not be deemed an admission that the Reporting Persons are the beneficial owners of such securities for purposes of Section 13(d) or for any other purpose.

(c) The following transactions in the Issuer's Common Stock were effected by the Funds noted below during the sixty days preceding the filing of this statement. All transactions were effected in the over-the-counter market directly with a broker-dealer. Except as disclosed herein or in any previous amendments to this Schedule 13D, none of the Reporting Persons or their affiliates has effected any other transactions in securities of the Issuer during the past 60 days.

Name	Date	Number of Shares	Transaction	Price/ Share	Footnotes
667, L.P.	12/13/2013	15,613	Short Sale	8.5015	1
Baker Brothers Life Sciences, L.P.	12/13/2013	177,263	Short Sale	8.5015	1
14159, L.P.	12/13/2013	4,261	Short Sale	8.5015	1
667, L.P.	12/16/2013	88	Short Sale	8.5090	2
Baker Brothers Life Sciences, L.P.	12/16/2013	989	Short Sale	8.5090	2
14159, L.P.	12/16/2013	23	Short Sale	8.5090	2
667, L.P.	12/20/2013	8,347	Short Sale	8.2252	3
Baker Brothers Life Sciences, L.P.	12/20/2013	94,724	Short Sale	8.2252	3
14159, L.P.	12/20/2013	2,277	Short Sale	8.2252	3
667, L.P.	12/23/2013	2,873	Short Sale	8.3862	4
Baker Brothers Life Sciences, L.P.	12/23/2013	32,596	Short Sale	8.3862	4
14159, L.P.	12/23/2013	783	Short Sale	8.3862	4
667, L.P.	12/24/2013	792	Short Sale	8.2651	5
Baker Brothers Life Sciences, L.P.	12/24/2013	8,992	Short Sale	8.2651	5
14159, L.P.	12/24/2013	216	Short Sale	8.2651	5
667, L.P.	12/26/2013	1,803	Sale	8.2465	6
Baker Brothers Life Sciences, L.P.	12/26/2013	20,458	Sale	8.2465	6
14159, L.P.	12/26/2013	492	Sale	8.2465	6
667, L.P.	12/27/2013	888	Sale	8.2275	7
Baker Brothers Life Sciences, L.P.	12/27/2013	10,076	Sale	8.2275	7
14159, L.P.	12/27/2013	242	Sale	8.2275	7
667, L.P.	12/30/2013	27,713	Closing of short positions "against the Box"	-	
Baker Brothers Life Sciences, L.P.	12/30/2013	314,564	Closing of short positions "against the Box"	-	
14159, L.P.	12/30/2013	7,560	Closing of short positions "against the Box"	-	

(1) The reported price is a weighted average price. These shares were traded in multiple transactions at prices ranging from \$8.50 to \$8.57. The Reporting Persons undertake to provide the staff of the Securities and Exchange Commission (the "Staff"), upon request, full information regarding the number of shares traded at each separate price within the ranges set forth in this footnote.

(2) The reported price is a weighted average price. These shares were traded in multiple transactions at prices ranging from \$8.50 to \$8.57. The Reporting Persons undertake to provide the Staff, upon request, full information regarding the number of shares traded at each separate price within the ranges set forth in this footnote.

(3) The reported price is a weighted average price. These shares were traded in multiple transactions at prices ranging from \$8.00 to \$8.41. The Reporting Persons undertake to provide the Staff, upon request, full information regarding the number of shares traded at each separate price within the ranges set forth in this footnote.

(4) The reported price is a weighted average price. These shares were traded in multiple transactions at prices ranging from \$8.25 to \$8.59 The Reporting Persons undertake to provide the Staff, upon request, full information regarding the number of shares traded at each separate price within the ranges set forth in this footnote.

(5) The reported price is a weighted average price. These shares were traded in multiple transactions at prices ranging from \$8.25 to \$8.36 The Reporting Persons undertake to provide the Staff, upon request, full information regarding the number of shares traded at each separate price within the ranges set forth in this footnote.

(6) The reported price is a weighted average price. These shares were traded in multiple transactions at prices ranging from \$8.20 to \$8.41 The Reporting Persons undertake to provide the Staff, upon request, full information regarding the number of shares traded at each separate price within the ranges set forth in this footnote.

(7) The reported price is a weighted average price. These shares were traded in multiple transactions at prices ranging from \$8.20 to \$8.36 The Reporting Persons undertake to provide the Staff, upon request, full information regarding the number of shares traded at each separate price within the ranges set forth in this footnote.

(d) Certain securities of the Issuer are held directly by 667, a limited partnership the sole general partner of which is Baker Biotech Capital, L.P., a limited partnership the sole general partner of which is Baker Biotech Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of Baker Biotech Capital (GP), LLC.

Certain securities of the Issuer are held directly by Life Sciences, a limited partnership the sole general partner of which is Baker Brothers Life Sciences Capital, L.P., a limited partnership the sole general partner of which is Baker Brothers Life Sciences Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of Baker Brothers Life Sciences Capital (GP), LLC.

Certain securities of the Issuer are held directly by 14159, a limited partnership the sole general partner of which is 14159 Capital, L.P., a limited partnership the sole general partner of which is 14159 Capital (GP), LLC. Julian C. Baker and Felix J. Baker are the controlling members of 14159 Capital (GP), LLC.

(e) As of the close of business on December 26, 2013, each Reporting Person ceased to be the beneficial owner of more than five percent of MEI Pharma, Inc.'s Common Stock.

**Item 7. Material to Be Filed as Exhibits.**

<b>Exhibit</b>	<b>Description</b>
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99.1:	Agreement Regarding the Joint Filing of Schedule 13D by and among the Reporting Persons
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**SIGNATURE**

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

December 30, 2013

**BAKER BROS. ADVISORS LP**

By: Baker Bros. Advisors (GP) LLC, its general partner

By: /s/ Scott L. Lessing

Name: Scott L. Lessing

Title: President

**BAKER BROS. ADVISORS (GP) LLC**

By: /s/ Scott L. Lessing

Name: Scott L. Lessing

Title: President

/s/ Julian C. Baker

Julian C. Baker

/s/ Felix J. Baker

Felix J. Baker

JOINT FILING AGREEMENT

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, the undersigned hereby agree that only one statement containing the information required by Schedule 13D need be filed with respect to the ownership by each of the undersigned of the shares of common stock of MEI Pharma, Inc..

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original.

EXECUTED as of this 30<sup>th</sup> day of December, 2013.

**BAKER BROS. ADVISORS LP**

By: Baker Bros. Advisors (GP) LLC, its general partner

By: /s/ Scott L. Lessing

Name: Scott L. Lessing

Title: President

**BAKER BROS. ADVISORS (GP) LLC**

By: /s/ Scott L. Lessing

Name: Scott L. Lessing

Title: President

/s/ Julian C. Baker

Julian C. Baker

/s/ Felix J. Baker

Felix J. Baker