

SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549

SCHEDULE 13D  
(Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT  
TO RULE 13d-1(a) AND AMENDMENTS THERETO FILED PURSUANT  
TO RULE 13d-2(a)

(Amendment No. 5)\*

**ACADIA Pharmaceuticals Inc.**

(Name of Issuer)

**Common Stock, par value \$0.0001 per share**

(Title of Class of Securities)

**004225108**

(CUSIP number)

Alexandra A. Toohey  
Chief Financial Officer  
Baker Bros. Advisors LP  
667 Madison Avenue, 21<sup>st</sup> Floor  
New York, NY 10065  
(212) 339-5690

(Name, address and telephone number of person authorized to receive notices and communications)

March 4, 2014

(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 .

(Continued on the following pages)

(Page 1 of 10 Pages)

\*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 or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act.

1.	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  Baker Bros. Advisors LP		
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) p (b) p		
3.	SEC USE ONLY		
4.	SOURCE OF FUNDS* OO		
5.	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) o		
6.	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER: 20,481,442	
	8.	SHARED VOTING POWER: 0	
	9.	SOLE DISPOSITIVE POWER: 20,481,442	
	10.	SHARED DISPOSITIVE POWER: 0	
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 20,481,442		
12.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* p		
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 21.0% (1)		
14.	TYPE OF REPORTING PERSON* IA, PN		

(1) Based on 97,502,618 shares of common stock outstanding as reported in the Issuer's Prospectus filed with the SEC on March 5, 2014.

1.	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  Baker Bros. Advisors (GP) LLC		
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) p (b) p		
3.	SEC USE ONLY		
4.	SOURCE OF FUNDS* OO		
5.	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) o		
6.	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER: 20,481,442	
	8.	SHARED VOTING POWER: 0	
	9.	SOLE DISPOSITIVE POWER: 20,481,442	
	10.	SHARED DISPOSITIVE POWER: 0	
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 20,481,442		
12.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* p		
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 21.0% (1)		
14.	TYPE OF REPORTING PERSON* HC, OO		

(1) Based on 97,502,618 shares of common stock outstanding as reported in the Issuer's Prospectus filed with the SEC on March 5, 2014.

1.	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  Felix J. Baker		
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* <span style="float: right;">(a) p (b) p</span>		
3.	SEC USE ONLY		
4.	SOURCE OF FUNDS* OO		
5.	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) o		
6.	CITIZENSHIP OR PLACE OF ORGANIZATION  United States		
	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER: 20,481,442
		8.	SHARED VOTING POWER:
		9.	SOLE DISPOSITIVE POWER: 20,481,442
		10.	SHARED DISPOSITIVE POWER:
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 20,481,442		
12.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* p		
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 21.0% (1)		
14.	TYPE OF REPORTING PERSON* IN, HC		

(1) Based on 97,502,618 shares of common stock outstanding as reported in the Issuer's Prospectus filed with the SEC on March 5, 2014.

1.	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  Julian C. Baker		
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* <span style="float: right;">(a) p (b) p</span>		
3.	SEC USE ONLY		
4.	SOURCE OF FUNDS* OO		
5.	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) o		
6.	CITIZENSHIP OR PLACE OF ORGANIZATION  United States		
	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER: 20,481,442
		8.	SHARED VOTING POWER
		9.	SOLE DISPOSITIVE POWER: 20,481,442
		10.	SHARED DISPOSITIVE POWER:
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 20,481,442		
12.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* p		
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 21.0% (1)		
14.	TYPE OF REPORTING PERSON* IN, HC		

(1) Based on 97,502,618 shares of common stock outstanding as reported in the Issuer's Prospectus filed with the SEC on March 5, 2014.

## **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 LP (the “Adviser”), Baker Bros. Advisors (GP), LLC (the “Adviser GP”), Julian C. Baker and Felix J. Baker. Except as supplemented herein, such statements, as heretofore amended and supplemented, remain in full force and effect.

### **Item 4. Purpose of the Transaction.**

On March 4, 2014, ACADIA Pharmaceuticals Inc. (“the Issuer”) entered into an underwriting agreement (the “Underwriting Agreement”) with Jefferies LLC and J.P. Morgan Securities LLC as representatives of the several underwriters listed on Schedule A thereto (the “Underwriters”), related to a public offering (the “Offering”) of 6,400,000 shares of the Issuer’s common stock at a price to the public of \$28.50 per share. In addition, the Issuer granted the Underwriters an option exercisable for 30 days from the date of the Underwriting Agreement to purchase, at the public offering price less any underwriting discounts and commissions, up to an additional 960,000 shares of common stock to cover overallotments, if any. The Offering is expected to close on March 10, 2014.

Pursuant to the Offering, on March 5, 2015, 667, L.P.(“667”), Baker Brothers Life Sciences, L.P. (“Life Sciences”) and 14159, L.P.(“14159”, and together with 667 and Life Sciences, the “Funds”) purchased 38,934, 475,644 and 11,738 shares of the Issuer’s common stock, respectively, at the offering price of \$28.50 per share, totaling 526,316 shares in the aggregate. Each of 667, Life Sciences and 14159 purchased the shares of the Issuer’s common stock with their working capital.

The Funds hold the securities for investment purposes. Whether the Reporting Persons or their affiliates purchase any additional securities or dispose of any securities, and the amount and timing of any such transactions, will depend upon the Reporting Persons’ continuing assessments of pertinent factors, including the availability of shares of Common Stock or other securities for purchase at particular price levels, the business and prospects of the Issuer, other business investment opportunities, economic conditions, stock market conditions, money market conditions, the attitudes and actions of the board of directors and management of the Issuer, the availability and nature of opportunities to dispose of shares in the Issuer and other plans and requirements of the particular entities. The Reporting Persons may discuss items of mutual interest with the Issuer, which could include items in subparagraphs (a) through (j). Depending upon their assessments of the above factors from time to time, the Reporting Persons or their affiliates may change their present intentions as stated above, including assessing whether to make suggestions to the management of the Issuer regarding financing, and whether to acquire additional securities of the Issuer, including shares of Common Stock (by means of open market purchases, privately negotiated purchases, exercise of some or all of the Warrants or Stock Options (as defined below), or otherwise) or to dispose of some or all of the securities of the Issuer, including shares of Common Stock, under their control.

Except as otherwise disclosed herein, at the present time, the Reporting Persons do not have any plans or proposals with respect to any extraordinary corporate transaction involving the Issuer including, without limitation, those matters described in subparagraphs (a) through (j) of Item 4 of Schedule 13D.

### **ITEM 5. Interest in Securities of the Issuer.**

(a) and (b) Items 7 through 11 and 13 of each of the cover pages of this Amendment No. 5 are incorporated herein by reference.

The information set forth in Item 4 is hereby incorporated by reference into this Item 5.

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Set forth below is the aggregate number of shares of Common Stock of 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 2019 Warrants and the 2018 Warrants (as defined below) by the Funds, subject to the limitations on exercise described below.

<u>Holder</u>	<u>Shares of Common Stock</u>	<u>2019 Warrants</u>	<u>2018 Warrants</u>
667, L.P.	1,552,055	42,131	-
Baker Brothers Life Sciences, L.P.	18,476,847	447,138	1,426,590
14159, L.P.	452,540	10,731	39,378
Total	20,481,442	500,000	1,465,968

The warrants to acquire common stock at an exercise price of \$0.01 per share with an expiration date of December 17, 2019 (“the 2019 Warrants”) are only exercisable to the extent that after giving effect to such exercise the holders thereof and their affiliates would beneficially own, for purposes of Rule 13d-3 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), no more than 19.99% of the outstanding shares of Common Stock of the Issuer. As a result of this restriction, the number of shares that may be issued upon exercise of the 2019 Warrants by the above holders may change depending upon changes in the outstanding shares of Common Stock.

The warrants to acquire common stock at an exercise price of \$1.38 per share with an expiration date of January 11, 2018 (the “2018 Warrants”) are only exercisable to the extent that giving effect to such exercise would not cause the holders thereof and their affiliates to beneficially own, for purposes of Rule 13d-3 under the Exchange Act, in excess of 9.9% of the outstanding shares of Common Stock of the Issuer. As a result of this restriction, the number of shares that may be issued on exercise of the 2018 Warrants by the above holders may change depending upon changes in the outstanding shares of Common Stock.

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 Amendment No. 5 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.

Dr. Stephen R. Biggar, an employee of the Adviser serves on the Issuer’s Board of Directors as a representative of the Funds. Dr. Stephen Biggar, an employee of the Adviser, holds 12,500 options (the “Options”) to purchase the common stock of the Issuer at \$17.01 per share expiring June 7, 2023. These Options vest in four equal tranches beginning on June 7, 2013. Dr. Biggar may from time to time in the future receive additional securities of the Issuer as compensation for his service on the Board, consistent with other non-employee directors of the Issuer.

Due to an agreement between Dr. Biggar and the Adviser, as well as the agreements and policies of the Funds, Dr. Biggar does not have any right to receive securities in compensation for serving as a Director of the Issuer and therefore has no pecuniary interest in the Options. The Funds are entitled to the pecuniary interest in the Options as each holds an indirect pecuniary interest. Felix J. Baker and Julian C. Baker as a result of their ownership interest in the general partners of the general partners of the Funds may be deemed to have an indirect pecuniary interest in the Options (ie. no direct pecuniary interest).

(c) 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.

(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) Not applicable.

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

<b>Exhibit</b>	<b>Description</b>
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.

March 7, 2014

**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

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JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, the undersigned hereby agree that this Statement on Schedule 13D relating to the Common Stock, \$0.0001 par value, of ACADIA Pharmaceuticals, Inc. is being filed with the Securities and Exchange Commission on behalf of each of them.

March 7, 2014

**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

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Julian C. Baker

/s/ Felix J. Baker

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Felix J. Baker

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