

SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549

SCHEDULE 13D

UNDER THE SECURITIES EXCHANGE ACT OF 1934  
(Amendment No. 1)\*

**Idera Pharmaceuticals, Inc.**

(Name of Issuer)

**Common Stock, par value \$0.001 per share**

(Title of Class of Securities)

**45168K306**

(CUSIP number)

Alexandra A. Toohey  
Chief Financial Officer  
Baker Bros. Advisors LP  
860 Washington Street, 3<sup>rd</sup> Floor  
New York, NY 10014  
(212) 339-5690

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

October 25, 2017

(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 (however, see the Notes).

1.	NAMES OF REPORTING PERSONS Baker Bros. Advisors LP	
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* <span style="float: right;">(a) <input type="checkbox"/> (b) <input type="checkbox"/></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) <input type="checkbox"/>	
6.	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER: 18,619,136 (1)
	8.	SHARED VOTING POWER: 0
	9.	SOLE DISPOSITIVE POWER: 18,619,136 (1)
	10.	SHARED DISPOSITIVE POWER: 0
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 18,619,136 (1)	
12.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* <input type="checkbox"/>	
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 9.9% (1)(2)	
14.	TYPE OF REPORTING PERSON* IA, PN	

- (1) Includes 151,667 shares of the common stock of Idera Pharmaceuticals, Inc. (the "Issuer") underlying options directly held by Julian C. Baker, a principal of Baker Bros. Advisors LP ("the Adviser"), and 151,667 shares of the common stock of the Issuer underlying options directly held by Dr. Kelvin M. Neu, an employee of the Adviser.
- (2) Based on 183,013,693 shares of the Issuer's common stock that will be outstanding following the Offering (as defined below) including 5,000,000 shares issued as part of the Underwriter's option (as defined below) described in the Issuer's Prospectus Supplement filed with the Securities and Exchange Commission (the "SEC") on October 26, 2017.

1.	NAMES OF REPORTING PERSONS Baker Bros. Advisors (GP) LLC	
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* <span style="float: right;">(a) <input type="checkbox"/> (b) <input type="checkbox"/></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) <input type="checkbox"/>	
6.	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER: 18,619,136 (1)
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12.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* <input type="checkbox"/>	
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 9.9% (1)(2)	
14.	TYPE OF REPORTING PERSON* HC, OO	

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1.	NAMES OF REPORTING PERSONS Felix J. Baker	
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* <span style="float: right;">(a) <input type="checkbox"/> (b) <input type="checkbox"/></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) <input type="checkbox"/>	
6.	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER: 18,619,136 (1)
	8.	SHARED VOTING POWER: 0
	9.	SOLE DISPOSITIVE POWER: 18,619,136 (1)
	10.	SHARED DISPOSITIVE POWER: 0
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 18,619,136 (1)	
12.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* <input type="checkbox"/>	
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 9.9% (1)(2)	
14.	TYPE OF REPORTING PERSON* IN, HC	

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1.	NAMES OF REPORTING PERSONS Julian C. Baker	
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* <span style="float: right;">(a) <input type="checkbox"/> (b) <input type="checkbox"/></span>	
3.	SEC USE ONLY	
4.	SOURCE OF FUNDS* OO	
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(2) Based on 183,013,693 shares of the Issuer's common stock that will be outstanding following the Offering (as defined below) including 5,000,000 shares issued as part of the Underwriter's option (as defined below) described in the Issuer's Prospectus Supplement filed with the SEC on October 26, 2017.

**Amendment No. 1 to Schedule 13D**

This Amendment No. 1 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.

The Adviser GP is the sole general partner of the Adviser. Pursuant to the 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 Funds respective general partners relinquished to the Adviser all discretion and authority with respect to the investment and voting power of the securities held by the Funds, and thus the Adviser has complete and unlimited discretion and authority with respect to the Funds’ investments and voting power over investments.

**ITEM 2. Identity and Background.**

(a) The Reporting Persons are:

1. The Adviser
2. The Adviser GP
3. Felix J. Baker
4. Julian C. Baker

(b) The business address of each of the Reporting Persons is:

c/o Baker Bros. Advisors LP  
860 Washington Street, 3<sup>rd</sup> Floor  
New York, NY 10014

(c) The Adviser is an entity engaged in investment activities, and the Adviser GP is in the business of acting as its general partner and, through the Adviser, investment activities. The principal business of each of Julian C. Baker and Felix J. Baker is to serve as a managing member of the Adviser GP.

(d) and (e) During the past five years, none of the Reporting Persons nor any of the Funds (as defined below) has been (i) convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors) or (ii) a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) The Adviser is a limited partnership organized under the laws of the State of Delaware. The Adviser GP is a limited liability company organized under the laws of the State of Delaware. The citizenship of each of Julian C. Baker and Felix J. Baker is the United States of America.

**Item 3. Source and Amount of Funds or Other Consideration.**

Item 3 of Amendment No. 1 is supplemented and amended, as the case may be, as follows:

The disclosure regarding the purchases in Item 4 below is incorporated herein by reference.

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

Item 4 of Amendment No. 1 is supplemented and superseded, as the case may be, as follows:

On October 25, 2017, Idera Pharmaceuticals, Inc. (the “Issuer”) entered into an underwriting agreement (the “Underwriting Agreement”) with J.P. Morgan Securities LLC and Goldman, Sachs & Co. LLC and Barclays Capital Inc., as representatives of the several underwriters listed on Schedule I thereto (the “Underwriters”), related to an underwritten public offering (the “Offering”) of 33,333,334 shares of the Issuer’s Common Stock at a price to the public of \$1.50 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 5,000,000 shares of common stock to cover overallocments, if any. The Offering is expected to close on October 30, 2017.

Pursuant to the Offering, on October 26, 2017, 667 and Life Sciences (collectively the “Purchasing Funds”) purchased 795,348 shares of Common Stock and 7,204,652 shares of Common Stock, respectively, at the offering price of \$1.50 per share. The Purchasing Funds purchased the shares of the Issuer’s Common Stock with their working capital.

Julian C. Baker, a principal of the Adviser, and Dr. Kelvin M. Neu, an employee of the Adviser, serve on the Board of Directors of the Issuer (the “Board”), as representatives of the Funds. Dr. Neu serves as Chairman of the Compensation Committee. Julian C. Baker and Dr. Neu hold 51,082 and 68,311 shares of Common Stock, respectively, received as compensation for service on the Board. Of such shares, 3,837 shares were granted to Julian C. Baker and 5,208 shares were granted to Dr. Neu on October 2, 2017, in lieu of directors retainer fees of \$8,750 and \$12,500, respectively. Additionally, Julian C. Baker and Dr. Neu each hold options to purchase shares of Common Stock (“Stock Options”) received for their service on the Board. Each of Julian C. Baker and Dr. Neu holds 225,000 Stock Options, of which 151,667 are vested or will vest within 60 days hereof.

The policy of the Funds and the Adviser does not permit principals or employees of the Adviser to receive compensation for serving as a directors of the Issuer and the Funds are instead entitled to the pecuniary interest in the Stock Options or shares of Common Stock received as director compensation. Julian C. Baker and Dr. Neu have no voting or dispositive power and no pecuniary interest in the Stock Options and Common Stock received as compensation for their service on the Board. Other than through their control of the Adviser, Felix J. Baker and Julian C. Baker have neither voting nor dispositive power and have no direct pecuniary interest in the Stock Options or Common Stock received as directors compensation held by Julian C. Baker and Dr. Neu.

Baker Bros. Advisors LP has voting and investment power over the Stock Options and Common Stock received as director compensation held by Julian C. Baker and Dr. Neu.

The Funds hold securities of the Issuer for investment purposes. The Reporting Persons or their affiliates may purchase additional securities or dispose of securities in varying amounts and at varying times depending 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 prospects of the Issuer, other business investment opportunities, economic conditions, stock market conditions, money market conditions, the attitudes and actions of the Board 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) of Item 4 of Schedule 13D.

Depending upon their assessments of the above factors, the Reporting Persons or their affiliates may change their present intentions as stated above and they may assess 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 (as defined below), exercise of some or all of the Stock Options, 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.

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**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. 1 are incorporated herein by reference. Set forth below is the aggregate number of shares of Common Stock directly held by each of the 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 certain warrants to purchase shares of Common Stock at an exercise price of \$0.47 per share that expire on May 7, 2018 (“2018 Warrants”), certain warrants to purchase shares of Common Stock at an exercise price of \$0.01 per share that expire on May 7, 2020 (“May 2020 Warrants”), certain warrants to purchase shares of Common Stock at an exercise price of \$0.01 per share that expire on September 25, 2020 (“September 2020 Warrants”) and certain warrants to purchase shares of Common Stock at an exercise price of \$0.01 per share that expire on February 10, 2021 (“2021 Warrants”, and together with the 2018 Warrants, May 2020 Warrants, and September 2020 Warrants, the “Warrants”) by the Funds, subject to the limitation on exercise described below. The information set forth below is based upon 183,013,693 shares of Common Stock that will be outstanding following the Offering including 5,000,000 shares issued as part of the Underwriters option, as described in the Issuer’s Prospectus Supplement filed with the Securities and Exchange Commission on October 26, 2017.

Holder	Shares of Common Stock	2018 Warrants	May 2020 Warrants	September 2020 Warrants	2021 Warrants
667, L.P.	1,723,224	2,250,846	1,752,291	465,230	172,406
Baker Brothers Life Sciences, L.P.	16,438,080	17,626,445	13,722,245	3,620,051	1,938,274
14159, L.P.	35,105	439,036	341,791	90,694	48,070
Total	18,196,409	20,316,327	15,816,327	4,175,975	2,158,750

The 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, no more than 4.999% 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 Warrants by the above holders may change depending upon changes in the outstanding shares of Common Stock.

Pursuant to management agreements, as amended, among the Adviser, 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.

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. 1 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.

The Adviser GP, and Felix J. Baker and Julian C. Baker as principals of the Adviser GP, may be deemed to have the power to vote or direct the vote of and the power to dispose or direct the disposition of the Stock Options held by Julian C. Baker and Dr. Neu.

(c) The disclosure regarding the purchase of Common Stock of the Issuer in the Offering and the disclosure regarding the shares of Common Stock granted to Julian C. Baker and Dr. Neu on October 2, 2017, described in Item 4 are incorporated by reference herein. Except as described in this Amendment No. 1, none of the Reporting Persons has effected any transaction in the 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.

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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.

October 30, 2017

**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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