ACHILLION PHARMACEUTICALS INC Form SC 13D/A January 20, 2015

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

SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 5)*

Achillion Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock, \$0.001 par value per share

(Title of Class of Securities)

00448Q201

(CUSIP Number)

RA Capital Management, LLC

20 Park Plaza, Suite 1200

Boston, MA 02116

Telephone: 617.778.2512

Attn: Peter Kolchinsky

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

September 30, 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 \$240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. x

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 ("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).

CUSIP No. 00448Q201

Names of Reporting Persons.

1	RA Capital Healthcare Fund, L.P.
2	Check the Appropriate Box if a Member of a Group (See Instructions) (a) " (b) "
3	SEC Use Only Source of Funds (See Instructions):
4	WC
	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):
5	
6	Citizenship or Place of Organization. Delaware
Number	7 Sole Voting Power 0 shares
of Shares Beneficially	8 Shared Voting Power 15,301,555 shares *
Owned by	9 Sole Dispositive Power 0 shares
Each	
Reporting	10 Shared Dispositive Power 15,301,555 shares*
Person With	
11 Aggregat	e Amount Beneficially Owned by Each Reporting Person
15,301,55	55 shares*

••

12 Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) Percent of Class Represented by Amount in Row (11)

1315.83%*

Type of Reporting Person (See Instructions)

14PN (Limited Partnership)

Reflects the number of shares of outstanding common stock of the issuer beneficially owned by the Reporting * Person on September 30, 2013. The percentage of the outstanding common stock beneficially owned was calculated based upon 96,642,564 shares outstanding according to the Quarterly Report on Form 10-Q filed by the Issuer on August 7, 2013.

CUSIP No. 00448Q201

Names of Reporting Persons.

1 RA Capital Management, LLC

2Check the Appropriate Box if a Member of a Group (See Instructions)
(a) "
(b) "
3SEC Use Only
Source of Funds (See Instructions):

4AF

Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):

5..

Citizenship or Place of Organization. Massachusetts 6

Number 7 Sole Voting Power **0** shares

of Shares

8 Shared Voting Power **19,957,061 shares***

Beneficially

Owned by 9 Sole Dispositive Power 0 shares

Each

Reporting 10 Shared Dispositive Power **19,957,061 shares***

Person With

Aggregate Amount Beneficially Owned by Each Reporting Person

1119,957,061 shares*

12Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

Percent of Class Represented by Amount in Row (11)

1320.65%*

Type of Reporting Person (See Instructions)

14IA, OO (Limited Liability Company)

Reflects the number of shares of outstanding common stock of the issuer beneficially owned by the Reporting *Person on September 30, 2013. The percentage of the outstanding common stock beneficially owned was calculated based upon 96,642,564 shares outstanding according to the Quarterly Report on Form 10-Q filed by the Issuer on August 7, 2013.

CUSIP No. 00448Q201

Names of Reporting Persons.

1 Peter Kolchinsky

2Check the Appropriate Box if a Member of a Group (See Instructions)

(a) "
(b) "

3 SEC Use Only

Source of Funds (See Instructions):

4AF

Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):

5..

Citizenship or Place of Organization. **United States** 6

Number7Sole Voting Power **0 shares**of Shares8Shared Voting Power **19,957,061 shares***Beneficially9Sole Dispositive Power **0 shares**Cowned by9Sole Dispositive Power **0 shares**Each10Shared Dispositive Power **19,957,061 shares***Person With11 Aggregate Amount Beneficially Owned by Each Reporting Person

19,957,061 shares

••

12 Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) Percent of Class Represented by Amount in Row (11)

1320.65%*

Type of Reporting Person (See Instructions)

14**HC, IN**

Reflects the number of shares of outstanding common stock of the issuer beneficially owned by the Reporting * Person on September 30, 2013. The percentage of the outstanding common stock beneficially owned was calculated based upon 96,642,564 shares outstanding according to the Quarterly Report on Form 10-Q filed by the Issuer on August 7, 2013.

EXPLANATORY NOTE

This Amendment No. 5 amends and supplements the statement on Schedule 13D originally filed with the Securities and Exchange Commission (the "SEC") on November 1, 2013 (the "Original Statement"), as amended by Amendment No. 1 to Schedule 13D filed with the SEC on March 21, 2014, Amendment No. 2 to Schedule 13D filed with the SEC on June 24, 2014, Amendment No. 3 to Schedule 13D filed with the SEC on August 20, 2014, and Amendment No. 4 to Schedule 13D filed with the SEC on August 27, 2014 (collectively, the "Statement"), in each case filed by the Reporting Persons (defined below) with respect to the common stock, par value \$0.001 per share ("Common Stock"), of Achillion Pharmaceuticals, Inc. (the "Issuer").

RA Capital Management, LLC ("Capital") is the general partner of RA Capital Healthcare Fund, L.P. (the "Fund") and serves as investment adviser for a separately managed account (the "Account"). Peter Kolchinsky is the manager of Capital. Mr. Kolchinsky, Capital and the Fund are referred to herein collectively as the "Reporting Persons." Shares reported herein as beneficially owned by the Fund represent shares of Common Stock (i) held of record by the Fund and (ii) issuable upon exercise of call options held of record by the Fund. Shares reported herein as beneficially owned by the Account, and (II) issuable upon exercise of call options held in the Account, and (II) issuable upon exercise of call options held in the Account, and (II) issuable upon exercise of call options held in the Account, and (II) issuable upon exercise of call options held in the Account. Shares of Common Stock, including Common Stock underlying call options, reported herein are reported as beneficially owned for purposes of Section 13(d) of the Securities Exchange Act of 1934, and the inclusion of such shares in this Amendment shall not be deemed an admission that the Reporting Persons are beneficial owners of such shares for any other purpose.

This Amendment is being filed to report the Reporting Persons' holdings of Common Stock (1) as of September 30, 2013, the first date on which any Reporting Person could be deemed to have beneficially owned more than 20% of the outstanding shares of the Common Stock, and (2) except to the extent previously reported in this Statement, on each date thereafter on which the number of shares of the outstanding Common Stock beneficially owned by any Reporting Person increased or decreased by an amount equal to or exceeding one percent of the class outstanding (each, a "Subsequent Amendment Date"). Information regarding the holdings of each Reporting Person's holdings as of each Subsequent Amendment Date is set forth in Item 5 hereof. In addition, this Amendment is being filed to amend and supplement Items 5 and 6 of the Statement.

Unless otherwise stated herein, the information provided in this Amendment speaks as of the dates of the transactions and events reported herein, and does not update the Statement through the date of the filing of this Amendment or any other date. This Amendment covers the period commencing on September 30, 2013 and ending on November 20, 2013 (the last previously unreported Subsequent Amendment Date). The Reporting Persons became eligible to report, and have commenced reporting, on Schedule 13G as of August 28, 2014.

Item 5. Interest in Securities of the Issuer

Item 5 of the Statement is hereby amended and supplemented as follows:

(a)-(b) The table below sets forth (1) the number of shares of Common Stock beneficially owned by each of the Reporting Persons as of September 30, 2013 and as of each Subsequent Amendment Date and (2) the percentage of the outstanding Common Stock beneficially owned by each of the Reporting Persons as of each such date, calculated based upon the total number of shares outstanding reported in the most recent Quarterly Report on Form 10-Q filed by the Issuer prior to the applicable date.

RA Capital Healthcare Fund, L.P.		RA Capital Management, LLC (1)		Peter Kolchinsky (1)		
Date	(#)	(%)	(#)	(%)	(#)	(%)
9/30/13	15,301,55	515.83%	919,957,06	120.65%	6 19,957,	06120.65%
10/11/13	317,359,30	017.96%	22,405,77	123.18%	622,405,	77123.18%
10/14/13	819,219,14	519.89%	624,775,000	025.64%	624,775,	00025.64%
10/31/13	320,150,16	420.85%	25,961,00	728.86%	625,961,	00728.86%
11/12/13	321,568,21	422.31%	27,756,00	728.71%	627,756,	00728.71%
11/20/13	322,445,11	523.22%	28,866,00	729.86%	628,866,	00729.86%

Amounts reported above for the Fund represent shares of Common Stock beneficially owned by the Fund. (1)Amounts reported above for each of Capital and Peter Kolchinsky represent shares of Common Stock beneficially owned by the Fund and the Account. (c) The following tables list the transactions in the Common Stock that were effected by the Fund and the Account during the sixty day period prior to September 30, 2013 and during the sixty day period prior to each Subsequent Amendment Date, excluding transactions previously reported in this Statement. Each of the transactions listed below was an open market purchase or sale of Common Stock.

Fund Transactions

Transaction	n Purchase / Sale Date	Shares (#)	Price (\$)
Purchase	7/1/2013	• •	6.5000
Purchase	7/2/2013	145,613	6.4835
Purchase	7/2/2013	128,027	6.5150
Purchase	7/2/2013	151,758	6.5050
Purchase	7/2/2013	38,402	6.4550
Purchase	7/2/2013	93,839	6.3104
Purchase	7/2/2013	504,194	6.3986
Purchase	7/2/2013	160,590	6.4147
Purchase	7/2/2013	159,977	6.4944
Purchase	7/3/2013	38,400	6.2497
Purchase	7/8/2013	38,400	6.2877
Purchase	7/9/2013	76,800	6.3235
Purchase	7/17/2013	38,400	7.0934
Sale	7/19/2013	(38,400)	7.2125
Purchase	7/22/2013	24,883	7.1600
Purchase	7/22/2013	38,400	7.2311
Sale	7/24/2013	(7,862)	7.2552
Purchase	7/25/2013	37,250	7.1947
Sale	7/25/2013	(14,592)	7.15
Sale	7/25/2013	(40,829)	7.1948
Purchase	7/29/2013	11,441	6.9
Purchase	7/29/2013	6,453	6.905
Sale	7/29/2013	(3,377)	6.9525
Purchase	8/2/2013	23,100	6.9835
Sale	8/5/2013	(23,100)	7.1141
Purchase	8/9/2013	77,000	6.3000
Purchase	8/20/2013	38,500	6.7492
Sale	8/20/2013	(9,951)	6.8643
Sale	8/21/2013	(4,312)	6.8741
Purchase	8/21/2013	23,100	6.6922
Purchase	8/22/2013	52,652	6.7645
Purchase	8/26/2013	115,500	6.575

Purchase	8/26/2013	38,500 6.58
Purchase	8/27/2013	77,000 6.4850
Purchase	8/28/2013	38,500 6.3850

Account Transactions

Transaction	n Purchase / Sale Date	Shares (#)	Price (\$)
Purchase	7/1/2013	11,600	6.5000
Purchase	7/2/2013	43,987	6.4835
Purchase	7/2/2013	38,673	6.5150
Purchase	7/2/2013	45,842	6.5050
Purchase	7/2/2013	11,598	6.4550
Purchase	7/2/2013	28,361	6.3104
Purchase	7/2/2013	152,306	6.3986
Purchase	7/2/2013	48,510	6.4147
Purchase	7/2/2013	48,323	6.4944
Purchase	7/3/2013	11,600	6.2497
Purchase	7/8/2013	11,600	6.2877
Purchase	7/9/2013	23,200	6.3235
Sale	7/10/2013	(72,400))6.335
Sale	7/10/2013	(22,900)6.405
Sale	7/10/2013	(41,547)6.4064
Sale	7/11/2013	(288,153)6.4504
Sale	7/11/2013	(50,000))6.472
Purchase	7/17/2013	11,600	7.0934
Sale	7/19/2013	(11,600)7.2125
Purchase	7/22/2013	7,517	7.1600
Purchase	7/22/2013	11,600	7.2311
Sale	7/24/2013	(2,375)7.2552
Purchase	7/25/2013	11,252	7.1947
Sale	7/25/2013	(4,408)7.15
Sale	7/25/2013	(12,334)7.1948
Purchase	7/29/2013	3,459	6.9
Purchase	7/29/2013	1,947	6.905
Sale	7/29/2013	(64,000))6.91
Sale	7/29/2013	(1,020))6.9525
Purchase	8/2/2013	6,900	6.9835
Sale	8/5/2013	(6,900))7.1141
Purchase	8/9/2013	23,000	6.3000
Purchase	8/20/2013	11,500	6.7492
Sale	8/20/2013	(2,972))6.8643
Sale	8/21/2013	(1,288)6.8741
Purchase	8/21/2013	6,900	6.6922
Purchase	8/22/2013	15,727	6.7645
Purchase	8/26/2013	34,500	
Purchase	8/26/2013	11,500	
Purchase	8/27/2013		6.4850
Purchase	8/28/2013	11,500	6.3850

See Item 6 below for information regarding call options that were purchased or sold by the Reporting Persons, as applicable, during the sixty day period prior to September 30, 2013 and the sixty day period prior to each Subsequent Amendment Date.

(d) Not applicable.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

Item 6 of the Statement is hereby amended and supplemented as follows:

The following tables list call options for shares of Common Stock that were either purchased or sold by the Fund or the Account, as applicable, during the period covered by this Amendment, excluding any such options previously reported in this Statement. Each of the options listed below reflects an "option spread" strategy pursuant to which the Fund or the Account, as applicable, simultaneously (1) purchased call option contracts representing a right to purchase a specified number of shares of Common Stock and (2) sold call option contracts representing an obligation to sell an equal number of shares of Common Stock, in each case at the exercise price specified in the table below. Each option contract represents either the right to buy or the obligation to sell 100 shares of the issuer's common stock.

Fund Options

	e Purchase / Sale Date	e Expiration Dat	e No. Option Contract	s Exercise Price
Call Option	5121112	1 /1 0 /1 4	7 405	\$10.00
	5/31/13	1/18/14	7,435	\$10.00
(right to buy) (1)				
Call Option				
	5/31/13	1/18/14	7,435	\$20.00
(obligation to sell) (1)				
Call Option				
	6/12/13	1/18/14	7,450	\$10.00
(right to buy) (1)				
Call Option				
	6/12/13	1/18/14	7,450	\$20.00
(obligation to sell) (1)				

Call Option	7/15/13	1/17/15	3,840	\$7.50
(right to buy) Call Option			,	·
(obligation to sell)	7/15/13	1/17/15	3,840	\$20.00
Call Option	7/15/13	1/17/15	3,840	\$7.50
(right to buy) Call Option	//13/13	1/1//13	3,840	\$7.50
-	7/15/13	1/17/15	3,840	\$20.00
(obligation to sell) Call Option				
(right to buy)	7/15/13	1/17/15	7,680	\$7.50
Call Option	7/15/13	1/17/15	7,680	\$20.00
(obligation to sell) Call Option				
(right to buy)	7/15/13	1/17/15	768	\$7.50
Call Option	7/15/13	1/17/15	768	\$20.00
(obligation to sell) Call Option	110/10	1/1//15	700	φ20.00
-	7/25/13	1/17/15	3,072	\$7.50
(right to buy) Call Option				** *
(obligation to sell)	7/25/13	1/17/15	3,072	\$20.00
Call Option	9/26/13	1/18/14	7,760	\$7.50
(right to buy) Call Option				
(abligation to call)	9/26/13	1/18/14	7,760	\$15.00

(obligation to sell) These option contracts were cancelled on October 1, 2013, through the sale and purchase of options having (1) identical terms, which closing transactions were previously reported in Amendments 3 and 4 to the Statement.

Account Options

Option Contract Type Call Option	e Purchase / Sale Date	Expiration Date	e No. Option Contracts	Exercise Price
Can Option	5/31/13	1/18/14	2,565	\$10.00
(right to buy) (2) Call Option	5/31/13	1/18/14	2,565	\$20.00
(obligation to sell) (2) Call Option	5151115	1/10/14	2,505	\$20.00
(right to buy) (2)	6/12/13	1/18/14	2,550	\$10.00
Call Option	6/12/13	1/18/14	2,550	\$20.00
(obligation to sell) (2) Call Option				
(right to buy)	7/15/13	1/17/15	2,320	\$7.50
Call Option	7/15/13	1/17/15	2,320	\$20.00
(obligation to sell) Call Option				
(right to buy)	7/15/13	1/17/15	2,552	\$7.50
Call Option	7/15/13	1/17/15	2,552	\$20.00
(obligation to sell) Call Option			_,	+
(right to buy)	7/25/13	1/17/15	928	\$7.50
Call Option	7/25/13	1/17/15	928	\$20.00
(obligation to sell) Call Option	1123113	1/1//13	720	ψ20.00
-	9/26/13	1/18/14	2,240	\$7.50
(right to buy) Call Option				* * * *
(abligation to call)	9/26/13	1/18/14	2,240	\$15.00

(obligation to sell)

(2) These option contracts were cancelled on October 1, 2013, through the sale and purchase of options having identical terms, which closing transactions were previously reported in Amendments 3 and 4 to the Statement.

Item 7. Material to Be Filed as Exhibits

Exhibit 99.1 Joint Filing Agreement by and among the Reporting Persons.

The Joint Filing Agreement, executed by and among the Reporting Persons, dated October 4, 2013, which was filed as an exhibit to the Schedule 13G filed by the Reporting Persons with the Securities and Exchange Commission on October 4, 2013, is hereby incorporated by reference.

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.

Date: January 20, 2015

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Management, LLC

General Partner

By: /s/ Peter Kolchinsky Peter Kolchinsky

Manager

RA CAPITAL MANAGEMENT, LLC

By: /s/ Peter Kolchinsky Peter Kolchinsky

Manager

PETER KOLCHINSKY

/s/ Peter Kolchinsky