

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

SCHEDULE 13D
(Rule 13d-101)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT
TO § 240.13d-1(a) AND AMENDMENTS THERETO FILED PURSUANT TO
§ 240.13d-2(a)

(Amendment No.)¹

BIOCRYST PHARMACEUTICALS, INC.
(Name of Issuer)

Common Stock, par value \$0.01 per share
(Title of Class of Securities)

09058V103
(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)

ANDREW FREEDMAN, ESQ.
OLSHAN FROME WOLOSKY LLP
1325 Avenue of the Americas
New York, New York 10019
(212) 451-2300

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

April 2, 2018
(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 .

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See § 240.13d-7 for other parties to whom copies are to be sent.

¹ 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*).

1	NAME OF REPORTING PERSON RA Capital Management, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
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 Massachusetts	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER - 0 -
	8	SHARED VOTING POWER 6,984,692
	9	SOLE DISPOSITIVE POWER - 0 -
	10	SHARED DISPOSITIVE POWER 6,984,692
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 6,984,692	
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) 7.1%*	
14	TYPE OF REPORTING PERSON IA, OO (Limited Liability Company)	

* The aggregate percentage of Shares reported owned by each Reporting Person is based upon 98,606,110 Shares outstanding, which is the total number of Shares outstanding as of January 31, 2018, as reported in the Issuer's Annual Report on Form 10-K/A, filed with the Securities and Exchange Commission on March 27, 2018.

1	NAME OF REPORTING PERSON Peter Kolchinsky	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
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 - 0 -
	8	SHARED VOTING POWER 6,984,692
	9	SOLE DISPOSITIVE POWER - 0 -
	10	SHARED DISPOSITIVE POWER 6,984,692
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 6,984,692	
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) 7.1%*	
14	TYPE OF REPORTING PERSON HC, IN	

* The aggregate percentage of Shares reported owned by each Reporting Person is based upon 98,606,110 Shares outstanding, which is the total number of Shares outstanding as of January 31, 2018, as reported in the Issuer's Annual Report on Form 10-K/A, filed with the Securities and Exchange Commission on March 27, 2018.

1	NAME OF REPORTING PERSON RA Capital Healthcare Fund, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
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 - 0 -
	8	SHARED VOTING POWER 4,964,818
	9	SOLE DISPOSITIVE POWER - 0 -
	10	SHARED DISPOSITIVE POWER 4,964,818
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 4,964,818	
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) 5.0%*	
14	TYPE OF REPORTING PERSON PN (Limited Partnership)	

* The aggregate percentage of Shares reported owned by each Reporting Person is based upon 98,606,110 Shares outstanding, which is the total number of Shares outstanding as of January 31, 2018, as reported in the Issuer's Annual Report on Form 10-K/A, filed with the Securities and Exchange Commission on March 27, 2018.

The following constitutes the Schedule 13D filed by the undersigned (the "Schedule 13D").

Item 1. Security and Issuer.

This statement relates to the common stock, par value \$0.01 per share (the "Shares"), of BioCryst Pharmaceuticals, Inc. (the "Issuer"). The address of the principal executive offices of the Issuer is 4505 Emperor Blvd., Suite 200, Durham, North Carolina 27703.

Item 2. Identity and Background.

(a) This Schedule 13D is being filed on behalf of (i) RA Capital Management, LLC ("RA Capital"), (ii) Peter Kolchinsky, and (iii) RA Capital Healthcare Fund, L.P. (the "Fund" and, together with each of the foregoing, the "Reporting Persons").

The Shares reported herein for RA Capital represent Shares reported for the Fund as well as Shares held in a separately managed account (the "Account"). RA Capital is the general partner of the Fund, which owns 4,964,818 Shares, and serves as investment adviser for the Account, which owns 2,019,874 Shares. Peter Kolchinsky is the manager of RA Capital. As the investment adviser to the Fund and the Account, RA Capital may be deemed a beneficial owner, for purposes of Section 13(d) of the Securities Exchange Act of 1934 (the "Act"), of any securities of the Issuer owned by the Fund or the Account. As the manager of RA Capital, Mr. Kolchinsky may be deemed a beneficial owner, for purposes of Section 13(d) of the Act, of any securities of the Issuer beneficially owned by RA Capital. RA Capital and Mr. Kolchinsky disclaim beneficial ownership of the securities reported in this Schedule 13D Statement (the "Statement") other than for the purpose of determining their obligations under Section 13(d) of the Act, and neither the filing of the Statement nor the filing of this Amendment shall be deemed an admission that either RA Capital or Mr. Kolchinsky is or was the beneficial owner of such securities for any other purpose.

(b) The business address of each of the Reporting Persons is: 20 Park Plaza, Suite 1200, Boston, MA 02116.

(c) The Fund is a private investment vehicle. RA Capital is a registered investment adviser and provides investment management services to the Fund and the Account. The principal occupation of Mr. Kolchinsky is investment management.

(d) None of the Reporting Persons has, during the last five years, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) None of the Reporting Persons has, during the last five years, been 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) See Item 6 of the cover pages.

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

The Reporting Persons acquired the Shares with working capital (which may, at any given time, include margin loans made by brokerage firms in the ordinary course of business). The aggregate purchase price of the 6,984,692 Shares beneficially owned by the Reporting Persons is approximately \$43,978,918, including applicable brokerage commissions.

Item 4. Purpose of Transaction.

RA Capital Management, LLC (“RA Capital”) delivered a letter to the board of directors (the “Board”) of the Issuer on April 2, 2018, in connection with the Issuer’s proposed merger (the “Proposed Merger”) with Idera Pharmaceuticals, Inc. (“Idera”) that will be submitted for a vote of the Issuer’s shareholders at a special meeting of shareholders scheduled to be held on May 9, 2018. In the letter, RA Capital expressed its intention to vote against the Proposed Merger based on its belief that a lack of strategic alignment and disparate risk profile between the Issuer and Idera would not serve the best interests of the Issuer’s shareholders.

RA Capital further stated in the letter its belief that the Board failed to adequately consider all available strategic alternatives prior to negotiating and finalizing the Proposed Merger and that, if effected, the combination of the Issuer and Idera would result in a dilutive impact on the Issuer’s stockholders and provide a disproportionate benefit to a single stockholder who also holds a large position in Idera.

The letter further noted RA Capital’s desire to invest in the Issuer based on its belief that the Issuer is undervalued and carries far less associated risk than Idera. In addition, the letter stated RA Capital’s belief that the Issuer’s lead program, BCX-7353, carries significant potential to serve as a major value inflection point within the next year, when data from its ongoing phase 3 trial are expected to be made available. RA Capital added that Idera has not revealed any comparable product development in its pipeline.

In addition, RA Capital expressed its belief that a combination with Idera would not increase the probability of success of the BCX-7353 phase 3 trial or create long-term value for BioCryst shareholders, noting that Idera’s CEO acknowledged in an investor call that the transaction was not “contemplated under creating clinical operation synergies” and that the programs at each company would “continue to operate as is.” The letter further stated that Idera’s financial forecasts indicated the Proposed Merger would not alleviate future financing requirements for the combined company, with projections that the combined company would require \$300 million in additional financing in 2019 and another \$300 million in 2020. However, according to the letter, Idera’s management team had estimated in the same analysis that the companies would require identical aggregate financing amounts as standalone entities. RA Capital noted in the letter that, as a result of this desire to keep the companies’ respective research and development work streams separate and the lack of meaningful synergies over the next three years, the Proposed Merger would not maximize value for shareholders.

In light of the Board’s inadequate justifications for pursuing the Proposed Merger, RA Capital concluded its letter by requesting that the Board reevaluate all strategic alternatives that would maximize shareholder value.

The foregoing description of the letter does not purport to be complete and is qualified in its entirety by reference to the full text of the letter, which is filed as Exhibit 99.1, and is incorporated herein by reference. The Proposed Merger is subject to the approval of the Issuer’s and Idera’s shareholders, respectively, including the affirmative vote of the holders of a majority of the outstanding shares of each of the Issuer’s and Idera’s common stock at special meetings of their shareholders scheduled to be held on May 9, 2018.

No Reporting Person has any present plan or proposal which would relate to or result in any of the matters set forth in subparagraphs (a) - (j) of Item 4 of Schedule 13D except as set forth herein or such as would occur upon or in connection with completion of, or following, any of the actions discussed herein. The Reporting Persons intend to review their investment in the Issuer on a continuing basis and may from time to time in the future express their views to and/or meet with management, the Board, other shareholders or third parties, including potential acquirers, and/or formulate plans or proposals regarding the Issuer, its assets or its securities. Such plans or proposals may include one or more plans that relate to or would result in any of the actions set forth in subparagraphs (a) - (j) of Item 4 of Schedule 13D.

Item 5. Interest in Securities of the Issuer.

The aggregate percentage of Shares reported owned by each Reporting Person is based upon 98,606,110 Shares outstanding, which is the total number of Shares outstanding as of January 31, 2018, as reported in the Issuer's Annual Report on Form 10-K/A, filed with the Securities and Exchange Commission on March 27, 2018.

Item 5(a)-(b) See Items 7-11 of the cover pages and Item 2 of this Statement.

Item 5(c) of the Statement is hereby amended and supplemented by adding the following:

(c) The Reporting Persons have not entered into any transactions in the Shares during the past sixty days.

(d) No person other than the Reporting Persons is known to have the right to receive, or the power to direct the receipt of dividends from, or proceeds from the sale of, the Shares.

(e) Not Applicable.

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

On April 2, 2018, the Reporting Persons entered into a Joint Filing Agreement in which the Reporting Persons agreed to the joint filing on behalf of each of them of statements on Schedule 13D with respect to the securities of the Issuer to the extent required by applicable law. The Joint Filing Agreement is attached hereto as Exhibit 99.2 and is incorporated herein by reference.

Other than as described herein, there are no contracts, arrangements, understandings or relationships among the Reporting Persons, or between the Reporting Persons and any other person, with respect to the securities of the Issuer.

Item 7. Material to be Filed as Exhibits.

99.1 Letter to the Board of Directors, dated April 2, 2018.

99.2 Joint Filing Agreement by and between RA Capital Management, LLC and Peter Kolchinsky, dated April 2, 2018.

SIGNATURES

After reasonable inquiry and to the best of his knowledge and belief, the undersigned certifies that the information set forth in this statement is true, complete and correct.

Dated: April 2, 2018

RA CAPITAL MANAGEMENT, LLC

By: /s/ Rajeev Shah
Rajeev Shah
Authorized Signatory

PETER KOLCHINSKY

/s/ Peter Kolchinsky

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Management, LLC
Its: General Partner

By: /s/ Rajeev Shah
Rajeev Shah
Authorized Signatory

RA Capital Management, LLC
20 Park Plaza, Suite 1200
Boston, MA 02116

April 2, 2018

BioCryst Pharmaceuticals, Inc.
4505 Emperor Blvd., Suite 200
Durham, North Carolina 27703
Attn: Board of Directors

Dear Board Members:

Our firm, RA Capital Management (“RA Capital”) is a multi-stage investment manager dedicated to evidence-based investing in public and private healthcare and life science companies that are developing drugs, medical devices, and diagnostics. We are writing to the Board of Directors (the “Board”) as a large shareholder of BioCryst Pharmaceuticals, Inc. (“BioCryst” or the “Company”) since 2013, with beneficial ownership of 6,984,692 shares, or approximately 7.1% of BioCryst’s common stock, in response to the Company’s proposed merger with Idera Pharmaceuticals, Inc. (“Idera”). We appreciate and agree with the arguments that have already been publicly presented against the merger by another shareholder, Great Point Partners. We strongly believe that a merger with Idera would be to the detriment of BioCryst shareholders and intend to vote our shares against it.

Our rationale for investing in BioCryst was based on our belief that it is undervalued and presents significant potential to generate long-term shareholder value. We have serious concerns about the proposed merger, specifically around the lack of strategic alignment, disparate risk profiles between the companies, dilutive impact on BioCryst shareholders, inadequate consideration of strategic alternatives, and disproportionate benefit to a single shareholder.

We find BioCryst’s lead molecule, BCX-7353, to be a compelling late-stage drug candidate with a high likelihood of improving the standard of care for patients living with hereditary angioedema (HAE). If the ongoing phase 3 trial of BCX-7353 is successful, we believe it can generate enormous value for shareholders when data are reported in the first half of 2019. It has the potential to be the most convenient treatment option in the vast and fast-growing HAE market.

A merger with Idera will not increase the probability of success of the BCX-7353 phase 3 trial, nor will it create long-term value for BioCryst shareholders. Idera’s CEO even acknowledged in an investor call that the transaction was not “contemplated under creating clinical operation synergies” and that the programs at each company would “continue to operate as is.” Idera’s management team generated financial forecasts demonstrating that the merger would not even alleviate future financing requirements for the combined company, with projections that the combined company will require \$300 million in additional financing in 2019 and another \$300 million in 2020. However, in the same analysis Idera’s management team estimates that the companies would require the identical aggregate financing amount as standalone entities. Given management’s desire to keep the companies’ respective research and development work streams separate and the lack of meaningful synergies over the next 3 years, we fail to understand what value would be created by the proposed transaction. We view this proposed merger with Idera as unnecessary and unjustified dilution of existing BioCryst shareholders just one year before a potentially major value inflection point.

We respect the Idera management team's track record in HAE and acknowledge that there could be value in having the Idera executives that were part of the Viropharma management team advise, consult to, or even serve on the BioCryst Board. But any such value in itself is inadequate justification for pursuing this merger and would fall far short of offsetting the dramatic dilution to the value of BioCryst shares resulting from a merger with Idera.

While we appreciate that both companies could potentially create value, we made the conscious choice to invest in BioCryst and not Idera because we consider BioCryst to be far more undervalued with far less associated risk. BioCryst's lead program, BCX-7353 for HAE, has completed a rigorous placebo-controlled phase 2 study, which we expect should be highly predictive of success in the final phase 3 study, for which data are expected in the first half of 2019. Assuming only this program is successful, Idera's financial advisor, Goldman Sachs ("Goldman"), models greater than 300% upside in BioCryst stock value from its closing price the day before the merger was announced. In contrast, Idera has only reported data for its lead program, IMO-2125, in a small uncontrolled melanoma trial. Even assuming IMO-2125 is successful in melanoma, Goldman only estimates 21% upside in Idera's stock for this program alone, which in our opinion is insufficient to justify the risk. In order to model further potential upside, Goldman assigned value to IMO-2125 in tumor types in which IMO-2125 has never been tested, which requires assumptions that we are unwilling to make. A combination of these two companies without a clear strategic purpose or potential for significant operational synergies would not serve the best interests of BioCryst shareholders.

The Board did not appear to fully consider all of the other strategic alternatives available, including changes to the management team or the potential sale of the Company to a third party in a structured process. This, in addition to a lack of transparency surrounding the Board's intention to seek this merger, warrants further inquiry in to the fairness of the proposed transaction and why the Board did not explore an auction or sale process in order to maximize value in the best interests of all shareholders.

We also believe that the proposed merger disproportionately benefits a single shareholder. If the proposed transaction were effected today, the largest current shareholder of BioCryst would own approximately 16% of the combined company, more than its current 14% stake, as a result of a greater proportionate ownership in Idera, while other shareholders would experience significant dilution.

We therefore request that the Board reevaluate what is in the best interest of all BioCryst shareholders and respect the choices we, and other shareholders, have made by investing only in BioCryst and not Idera.

Sincerely,

RA Capital Healthcare Fund, L.P.

By: RA Capital Management, LLC, its General Partner

JOINT FILING AGREEMENT

This Joint Filing Agreement, dated as of April 2, 2018, is by and among RA Capital Management, LLC, RA Capital Healthcare Fund, L.P. and Peter Kolchinsky (the foregoing are collectively referred to herein as the "Filers").

Each of the Filers may be required to file with the United States Securities and Exchange Commission a statement on Schedule 13G and/or 13D with respect to Common Stock, par value \$0.01 per share, of BioCryst Pharmaceuticals, Inc. beneficially owned by them from time to time.

Pursuant to and in accordance with Rule 13(d)(1)(k) promulgated under the Securities Exchange Act of 1934, as amended, the Filers hereby agree to file a single statement on Schedule 13G and/or 13D (and any amendments thereto) on behalf of each of such parties, and hereby further agree to file this Joint Filing Agreement as an exhibit to such statement, as required by such rule.

This Joint Filing Agreement may be terminated by any of the Filers upon one week's prior written notice or such lesser period of notice as the Filers may mutually agree.

Executed and delivered as of the date first above written.

RA CAPITAL MANAGEMENT, LLC

By: /s/ Rajeev Shah
Rajeev Shah
Authorized Signatory

PETER KOLCHINSKY

/s/ Peter Kolchinsky

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Management, LLC
Its: General Partner

By: /s/ Rajeev Shah
Rajeev Shah
Authorized Signatory