

**SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

BIOCRYST PHARMACEUTICALS, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware
(State of Incorporation)

62-1413174
(I.R.S. Employer Identification No.)

**2190 Parkway Lake Drive
Birmingham, Alabama 35244**
(Address of Principal Executive Offices)

**Stock Incentive Plan
Employment Letter Agreement dated April 2, 2007
between BioCryst Pharmaceuticals, Inc. and David McCullough**
(Full Titles of the Plans)

**Jon P. Stonehouse
President and Chief Executive Officer
BioCryst Pharmaceuticals, Inc.
2190 Parkway Lake Drive
Birmingham, Alabama 35244
(205) 444-4600**

(Name, Address and Telephone Number, Including Area Code, of Agent for Service)

Copies to:

**Richard R. Plumridge, Esq.
Jennifer A. D'Alessandro, Esq.
Holme Roberts & Owen LLP
1700 Lincoln Street, Suite 4100
Denver, CO 80203
(303) 861-7000**

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share(4)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee(5)
Stock Incentive Plan, Common Stock, \$0.01 par value	1,200,000 (2)	\$10.06	\$12,072,000	\$370.61
Employment Letter Agreement, Common Stock, \$0.01 par value	120,000 (3)	\$10.06	\$1,207,200	\$37.06
Total	1,320,000	\$10.06	\$13,279,200	\$407.67

- (1) This Registration Statement shall also cover any additional shares of Common Stock which become issuable by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the receipt of consideration which results in an increase in the number of the Registrant's outstanding shares of Common Stock.
- (2) Increase in authorized number of shares under the amended and restated Stock Incentive Plan as approved by the Registrant's stockholders in May 2007.
- (3) 120,000 shares related to an inducement grant pursuant to an employment letter agreement dated April 2, 2007 between BioCryst Pharmaceuticals, Inc. and to David McCullough. Additional shares were granted under the Stock Incentive Plan.

- (4) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(h) under the Securities Act of 1933, as amended, based upon the average of the high and low prices of the Registrant's Common Stock on August 16, 2007, as reported on The Nasdaq Global Market.
 - (5) The registration fee for the securities registered hereby was calculated by multiplying the proposed maximum offering price by .0000307 in accordance with Section 6(b) of the Securities Act and the related rules.
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PART II **INFORMATION REQUIRED IN THE REGISTRATION STATEMENT**

Item 3. Incorporation of Documents by Reference.

The following documents filed by BioCryst Pharmaceuticals, Inc. (the “Registrant”) with the Securities and Exchange Commission (the “Commission”) pursuant to the Securities Exchange Act of 1934, as amended (the “Exchange Act”) are incorporated by reference in this Registration Statement:

- (a) The Registrant’s Annual Report on Form 10-K for the year ended December 31, 2006;
- (b) The Registrant’s Quarterly Reports on Form 10-Q for the quarters ended March 31, 2007 and June 30, 2007;
- (c) The Registrant’s Current Reports on Form 8-K as filed with the SEC on January 11, 2007, March 6, 2007, March 27, 2007, July 18, 2007, July 24, 2007, July 26, 2007, August 6, 2007, August 7, 2007 and August 10, 2007;
- (d) Registration Statement No. 0-23186 on Form 8-A filed with the Commission on January 7, 1994, together with the amendment thereto filed with the Commission on March 14, 1994, pursuant to Section 12 of the Exchange Act, in which there is described the terms, rights and provisions applicable to the Registrant’s outstanding Common Stock; and
- (e) Registration Statement No. 0-23186 on Form 8-A filed with the Commission on June 17, 2002, pursuant to Section 12 of the Exchange Act, in which there is described the terms, rights and provisions applicable to the Registrant’s preferred stock purchase rights.

All reports and other documents subsequently filed with the Commission by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered herein have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents, excluding any information furnished under Item 7.01 or Item 2.02 of any Current Report on Form 8-K. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or replaces such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law (the “DGCL”) authorizes a court to award, or a corporation’s board of directors to grant, indemnification to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act. The Registrant’s Third Restated Certificate of Incorporation, as amended, provides for indemnification of its directors and officers and permissible indemnification of employees and other

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agents to the maximum extent permitted by the Delaware General Corporation Law. The Registrant's Third Restated Certificate of Incorporation, as amended, provides that no directors of the registrant shall be liable to the Registrant or its stockholders for monetary damages for breach of fiduciary duty as a director to the fullest extent permitted by the DGCL. The Registrant has liability insurance for its directors and officers.

Item 7. Exemptions from Registration Claimed.

Not applicable.

Item 8. Exhibits.

The following exhibits are submitted herewith or incorporated by reference herein.

<u>Exhibit Number</u>	<u>Description</u>
5.1	Opinion of Holme Roberts & Owen LLP (filed herewith).
10.1	Stock Incentive Plan, as amended and restated effective March 2007 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2007).
10.2	Employment Letter Agreement dated April 2, 2007 between BioCryst Pharmaceuticals, Inc. and David McCullough (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2007).
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm. (filed herewith)
23.2	Consent of Holme Roberts & Owen LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page).

Item 9. Undertakings.

a. The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the 1933 Act.

(ii) To reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement — notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in this Registration Statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this

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Registration Statement; provided, however, that paragraphs a.(1)(i) and a.(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post effective amendment any of the securities being registered which remain unsold at the termination of the offering.

b. The undersigned registrant hereby undertakes that, for purposes of determining liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act that is incorporated by reference in this Registration Statement shall be deemed a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

c. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Birmingham, State of Alabama, on the 22nd day of August, 2007.

BIOCRYST PHARMACEUTICALS, INC.

By: /s/ Jon P. Stonehouse

Jon P. Stonehouse

President & Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned officers and directors of BIOCRYST PHARMACEUTICALS, INC. hereby constitute and appoint Jon P. Stonehouse and Michael A. Darwin, and each of them, as our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for us and in our name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as we might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Jon P. Stonehouse</u> Jon P. Stonehouse	President & Chief Executive Officer Director (Principal Executive Officer)	August 22, 2007
<u>/s/ J. Claude Bennett</u> J. Claude Bennett, M.D.	Chief Operating Officer and Director	August 16, 2007
<u>/s/ Michael A. Darwin</u> Michael A. Darwin	Chief Financial Officer, Secretary and Treasurer (Principal Financial and Accounting Officer)	August 22, 2007
Stephen R. Biggar, M.D., Ph.D.	Director	

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Signature	Title	Date
/s/ William W. Featheringill William W. Featheringill	Director	August 22, 2007
/s/ John L. Higgins John L. Higgins	Director	August 22, 2007
/s/ Zola P. Horovitz Zola P. Horovitz, Ph.D.	Director	August 22, 2007
/s/ Beth C. Seidenberg Beth C. Seidenberg, M.D.	Director	August 22, 2007
/s/ Joseph H. Sherrill, Jr. Joseph H. Sherrill, Jr.	Director	August 16, 2007
/s/ William M. Spencer, III William M. Spencer, III	Director	August 22, 2007
/s/ Randolph C. Steer Randolph C. Steer, M.D., Ph.D.	Director	August 22, 2007

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[LETTERHEAD OF HOLME ROBERTS & OWEN LLP]

August 22, 2007

BioCryst Pharmaceuticals, Inc.
2190 Parkway Lake Drive
Birmingham, AL 35244

Re: BioCryst Pharmaceuticals, Inc. Form S-8 Registration Statement

Ladies and Gentlemen:

Reference is made to the registration statement on Form S-8 to be filed with the Securities and Exchange Commission (the "Commission") on or about August 22, 2007 (the "Registration Statement") by BioCryst Pharmaceuticals, Inc., a Delaware corporation (the "Company"), for the purpose of registering under the Securities Act of 1933, as amended (the "Act"): (a) 1,200,000 shares of its common stock, \$0.001 par value (the "Common Stock"), which may be offered and issued under the Stock Incentive Plan, as amended and restated in March 2007 (the "Plan"); (b) 10,000 shares of restricted Common Stock which have been offered and issued under the Employment Letter Agreement dated April 2, 2007 between BioCryst Pharmaceuticals, Inc. and David McCullough (the "Letter Agreement"); and (c) 110,000 shares of Common Stock which will be offered and issued upon the exercise of stock options granted under the Letter Agreement.

This opinion is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Act.

In connection with this opinion, we have examined the Company's Third Restated Certificate of Incorporation, as amended, and Bylaws, as amended; the originals or copies certified to our satisfaction of certain corporate records and proceedings of the Company, including actions taken by the Company's Board of Directors in connection with the authorization and issuance of the Common Stock and related matters; and such other certificates, instruments and documents as we deemed appropriate to enable us to render the opinion expressed below.

In all such examinations, we have assumed, without independent investigation or inquiry, the legal capacity of all natural persons executing documents, the genuineness of all signatures on original or certified copies, the authenticity of all original or certified copies and the conformity to original or certified documents of all copies submitted to us as conformed or reproduction copies. We have relied as to factual matters upon and have assumed the accuracy of, the statements made in a certificate of an officer of the Company delivered to us and the certificates and other statements or information of or from public officials and officers and representatives of the Company.

Based on the foregoing and the limitations, qualifications, exceptions and assumptions set forth herein, we are of the opinion that:

1. The shares of Common Stock reserved for issuance under the Plan, when sold and delivered by the Company as contemplated by the Registration Statement and in accordance with the terms of the Plan, will be validly issued, fully paid and non-assessable;
2. The shares of restricted Common Stock issued under the Letter Agreement are validly issued, fully paid and non-assessable; and
3. The shares of Common Stock reserved for issuance pursuant to the exercise of options granted under the Letter Agreement, when issued, sold and delivered by the Company against payment of consideration therefor in accordance with the terms of the Letter Agreement and any applicable issuance agreement, will be validly issued, fully paid and non-assessable.

The opinions expressed herein are limited to the General Corporation Law of the State of Delaware (including the statutory provisions and all applicable provisions of the Delaware Constitution and reported judicial decisions interpreting these laws).

We consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement. In giving this consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission promulgated thereunder.

We do not express an opinion on any matters other than those expressly set forth in this letter. The opinions expressed herein are rendered as of the date hereof. We do not undertake to advise you of matters that may come to our attention subsequent to the date hereof and that may affect the opinions expressed herein, including without limitation, future changes in applicable law. This letter is our opinion as to certain legal conclusions as specifically set forth herein and is not and should not be deemed to be a representation or opinion as to any factual matters.

Very truly yours,

/s/ HOLME ROBERTS & OWEN LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) of BioCryst Pharmaceuticals, Inc. pertaining to the Stock Incentive Plan (Amendment and Restatement of 1991 Stock Option Plan) of our reports dated March 12, 2007, with respect to: (1) the financial statements of BioCryst Pharmaceuticals, Inc.; (2) BioCryst Pharmaceuticals, Inc. management's assessment of the effectiveness of internal control over financial reporting; and (3) the effectiveness of internal control over financial reporting of BioCryst Pharmaceuticals, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2006, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Birmingham, Alabama
August 20, 2007