

BIOCRYST PHARMACEUTICALS INC

Form S-3

June 28, 2011

Table of Contents

As filed with the United States Securities and Exchange Commission on June 28, 2011

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3
REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

BioCryst Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

62-1413174
(I.R.S. Employer
Identification Number)

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

4505 Emperor Blvd., Suite 200

Durham, North Carolina 27703

(919) 859-1302

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jon P. Stonehouse

President and Chief Executive Officer

4505 Emperor Blvd., Suite 200

Durham, North Carolina 27703

(919) 859-1302

(Name, address, including zip code and telephone number, including area code, of agent for service)

With a copy to:

Brian Lane, Esq.

Gibson, Dunn & Crutcher LLP

1050 Connecticut Avenue, NW

Washington, DC 20036

(202) 955-8500

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement, as determined by market conditions.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, please check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

If this Form is a registration statement pursuant to General Instruction I.D. or a post effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. "

If this form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. "

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act.

Large accelerated filer	..			Accelerated filer	p
Non-accelerated filer	..			Smaller reporting company	..

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price per Unit(2)	Proposed Maximum Aggregate Offering Price(3)	Amount of Registration Fee(4)
Common Stock(5)(6), Preferred Stock(6), Depository Shares(6), Stock Purchase Contracts(6), Warrants(6), Units(6)	\$70,000,000	N/A	\$70,000,000	\$8,127

- (1) There are being registered under this registration statement such indeterminate number of securities of each identified class of the registrant, all at indeterminate prices, as shall have an aggregate initial offering price not to exceed \$70,000,000 or the equivalent amount denominated in one or more foreign currencies. Any securities registered under this registration statement may be sold separately or as units with other securities registered hereunder.
- (2) The proposed maximum offering price per unit is not specified as to each class of securities to be registered, pursuant to General Instruction II.D of Form S-3 under the Securities Act. The proposed maximum offering price per unit will be determined from time to time by the registrant in connection with, and at the time of, the issuance of the securities registered hereunder.
- (3) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457 under the Securities Act.
- (4) Calculated pursuant to Rule 457(o) under the Securities Act.
- (5) Each share of common stock includes the right to purchase one one-thousandth of a share of our Series B Junior Participating Preferred Stock.
- (6) Pursuant to Rule 457(i) under the Securities Act, the securities registered hereunder also include such indeterminate number of shares of common stock, preferred stock, depository shares, stock purchase contracts, warrants and units as may be issued upon exercise, settlement, exchange or conversion of any securities registered hereunder that provide for those issuances. In addition, pursuant to Rule 416 under the Securities Act, the securities registered hereunder include such indeterminate number of securities as may be issuable with respect to the securities being registered hereunder as a result of stock splits, stock dividends or similar transactions.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with section 8(a) of the Securities Act of 1933, as amended, or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

Table of Contents

EXPLANATORY NOTE

This registration statement contains two prospectuses:

a basic prospectus which covers the offering, issuance and sale of up to \$70.0 million of common stock, preferred stock, depositary shares, stock purchase contracts, warrants and units of BioCryst Pharmaceuticals, Inc. by the registrant; and

a sales agreement prospectus covering the offering, issuance and sale of our common stock that may be issued and sold under a sales agreement with McNicoll, Lewis & Vlak LLC.

The basic prospectus immediately follows this explanatory note. The sales agreement prospectus immediately follows the basic prospectus. The common stock that may be offered, issued and sold under the sales agreement prospectus is included in the \$70.0 million of securities that may be offered, issued and sold by the registrant under the basic prospectus.

Table of Contents

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission becomes effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JUNE 28, 2011

PROSPECTUS

\$70,000,000

Common Stock

Preferred Stock

Depository Shares

Stock Purchase Contracts

Warrants

Units

By this prospectus, we may from time to time offer securities to the public. We will provide specific terms of these securities in supplements to this prospectus. You should read this prospectus, each applicable prospectus supplement, and the information incorporated by reference in this prospectus and each applicable prospectus supplement carefully before you invest.

Our common stock, par value \$0.01 per share, trades on the NASDAQ Global Select Market under the symbol BCRX.

You should rely only on the information incorporated by reference or provided in this prospectus or any prospectus supplement. We have not authorized anyone else to provide you with different information or to make additional representations. We are not making or soliciting an offer of any securities other than the securities described in this prospectus and any prospectus supplement. We are not making or soliciting an offer of these securities in any state or jurisdiction where the offer is not permitted or in any circumstances in which such offer or solicitation is unlawful. You should not assume that the information contained or incorporated by reference in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents.

Investing in these securities involves a high degree of risk. See **Risk Factors on page 2 of this prospectus, in the applicable prospectus supplement we will deliver with this prospectus and in the documents incorporated herein and therein by reference.**

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

The securities may be sold by us to or through underwriters or dealers, directly to purchasers or through agents designated from time to time, or through a combination of these methods. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such underwriters and any applicable discounts or commissions and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement. This prospectus may not be used to sell any securities unless accompanied by a prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities, or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2011.

Table of Contents

TABLE OF CONTENTS

	Page
<u>ABOUT THIS PROSPECTUS</u>	i
<u>PROSPECTUS SUMMARY</u>	1
<u>RISK FACTORS</u>	2
<u>INFORMATION REGARDING FORWARD-LOOKING STATEMENTS</u>	3
<u>USE OF PROCEEDS</u>	5
<u>DESCRIPTION OF COMMON STOCK, PREFERRED STOCK AND DEPOSITARY SHARES</u>	6
<u>DESCRIPTION OF STOCK PURCHASE CONTRACTS</u>	10
<u>DESCRIPTION OF WARRANTS</u>	11
<u>DESCRIPTION OF UNITS</u>	12
<u>PLAN OF DISTRIBUTION</u>	13
<u>LEGAL MATTERS</u>	16
<u>EXPERTS</u>	16
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	17
<u>INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</u>	17

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a shelf registration or continuous offering process. Under this registration statement, we may sell any combination of the securities described in this prospectus from time to time, either separately or in units, in one or more offerings. Together, these offerings may total up to \$70.0 million.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement containing specific information about the terms of that offering. That prospectus supplement will also include the following information:

the type and amount of securities that we propose to sell;

the public offering price of the securities;

the names of any underwriters, agents or dealers through or to which the securities will be sold;

any compensation of those underwriters, agents or dealers;

information about any securities exchanges or automated quotation systems on which the securities will be listed or traded;

any risk factors applicable to the securities that we propose to sell; and

any other material information about the offering and sale of the securities.

If there is any inconsistency between the information in this prospectus and any prospectus supplement, you should rely on the information in the prospectus supplement. You should read both this prospectus and any prospectus supplement together with the additional information described under the heading *Where You Can Find More Information*. The registration statement containing this prospectus, including the exhibits to the registration statement, provides additional information about us and the securities offered under this prospectus. The registration

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

statement, including the exhibits, can be read at the SEC's website or at the SEC's offices mentioned under the heading "Where You Can Find More Information."

All references to "Company," "we," "our" or "us" refer solely to BioCryst Pharmaceuticals, Inc. and not to the persons who manage us or sit on our Board of Directors. All trade names used in this prospectus are either our registered trademarks or trademarks of their respective holders.

Table of Contents

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere or incorporated by reference into this prospectus. Because it is a summary, it does not contain all of the information that you should consider before investing in our securities. You should read this entire prospectus carefully, including the section entitled **Risk Factors** and the documents that we incorporate by reference into this prospectus, before making an investment decision.

Business of BioCryst Pharmaceuticals, Inc.

We are a biotechnology company that designs, optimizes and develops novel drugs that block key enzymes involved in therapeutic areas of interest to us. Areas of interest are determined primarily by the scientific discoveries and the potential advantages that our experienced drug discovery group develops in the laboratory along with the potential commercial opportunity of these discoveries. We integrate the disciplines of biology, crystallography, medicinal chemistry and computer modeling to discover and develop small molecule pharmaceuticals through the process known as structure-based drug design.

Structure-based drug design is a drug discovery approach by which we design synthetic compounds from detailed structural knowledge of the active sites of enzyme targets associated with particular diseases. We use X-ray crystallography, computer modeling of molecular structures and advanced chemistry techniques to focus on the three-dimensional molecular structure and active site characteristics of the enzymes that control cellular biology. Enzymes are proteins that act as catalysts for many vital biological reactions. Our goal generally is to design a compound that will fit in the active site of an enzyme and thereby interfere with the progression of disease. We currently have three principal products:

Peramivir, a neuraminidase inhibitor for the potential treatment of influenza;

BCX4208, a next generation purine nucleoside phosphorylase (PNP) inhibitor for gout; and

Forodesine, a PNP inhibitor for cutaneous T-cell lymphoma and chronic lymphocytic leukemia.

In addition to our principal products, we invest in our drug discovery team and retain exclusive rights to other compounds in a number of therapeutic areas. These compounds are currently in pre-clinical development and include potent inhibitors of parainfluenza hemagglutinin, neuraminidase, influenza neuraminidase, hepatitis C RNA polymerase, JAK inhibitors, plasma kallikrein and additional PNP inhibitors. We will continue to evaluate and test these compounds to determine which should be taken forward into clinical testing.

BioCryst is a Delaware corporation originally founded in 1986. Our principal offices are located at 4505 Emperor Blvd. Suite 200, Durham, North Carolina 27703, and our telephone number is (919) 859-1302. Our web site is located at <http://www.biocryst.com>. The information on our web site is not incorporated by reference into this prospectus.

Table of Contents

RISK FACTORS

Investing in our securities involves risks. Our business is influenced by many factors that are difficult to predict and beyond our control and that involve uncertainties that may materially affect our results of operations, financial condition or cash flows, or the value of these securities. These risks and uncertainties are described in the risk factor section of the documents that are incorporated by reference in this prospectus. Subsequent prospectus supplements may contain a discussion of additional risks applicable to an investment in us and the particular type of securities we are offering under the prospectus supplements. You should carefully consider all of the information contained in or incorporated by reference in this prospectus and in the applicable prospectus supplement before you invest in our securities.

Table of Contents

INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the information we incorporate by reference, contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, referred to as the Exchange Act, which are subject to the safe harbor created in Section 21E. All statements other than statements of historical facts contained in this prospectus are forward-looking statements. These forward-looking statements can generally be identified by the use of words such as may, will, intends, plans, believes, anticipates, expects, estimates, predicts, potential, the negative of these words or similar expressions. Statements that describe our future plans, strategies, intentions, expectations, objectives, goals or prospects are also forward-looking statements. These forward-looking statements include, but are not limited to, statements about:

the initiation, timing, progress and results of our preclinical testing, clinical trials, and other research and development efforts;

the potential funding from our contract with HHS for the development of peramivir;

the potential for a stockpiling order or profit from any order for peramivir;

the potential use of peramivir as a treatment for H1N1 flu (or other strains of flu);

the further preclinical or clinical development and commercialization of our product candidates, including peramivir, forodesine and other PNP inhibitor and hepatitis C development programs;

the implementation of our business model, strategic plans for our business, product candidates and technology;

our ability to establish and maintain collaborations;

plans, programs, progress and potential success of our collaborations, including Mundipharma International Holdings Limited for forodesine and Shionogi & Co., Ltd. and Green Cross Corporation for peramivir;

the ability of our wholly-owned subsidiary, JPR Royalty Sub LLC (Royalty Sub), which was formed in connection with our \$30.0 million financing transaction completed on March 9, 2011, to service its payment obligations in respect of its PhaRMA Senior Secured 14.0% Notes due 2020 (the PhaRMA Notes) issued in that financing transaction, and our ability to benefit from our equity interest in Royalty Sub;

the foreign currency hedge agreement entered into by us in connection with the issuance by Royalty Sub of the PhaRMA Notes;

the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;

our ability to operate our business without infringing the intellectual property rights of others;

estimates of our expenses, future revenues, capital requirements and our needs for additional financing;

the timing or likelihood of regulatory filings and approvals;

our financial performance; and

competitive companies, technologies and our industry.

These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or

Table of Contents

implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under **Risk Factors** and elsewhere in this prospectus. Any forward-looking statement in this prospectus reflects our current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, results of operations, industry and future growth. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

Discussions containing these forward-looking statements are also contained in **Management's Discussion and Analysis of Financial Condition and Results of Operations** incorporated by reference from our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q for the quarters ended since our most recent Annual Report, our Current Reports on Form 8-K, as well as any amendments we make to those filings with the SEC.

Table of Contents

USE OF PROCEEDS

Except as otherwise described in the applicable prospectus supplement, the net proceeds we expect to receive from the sale of the securities offered hereunder will be added to our general funds and used for general corporate purposes, which may include, but are not limited to:

funding our research and development efforts;

clinical development of BCX-4208;

pre-commercialization activities relating to intravenous peramivir;

capital expenditures; and

general working capital.

We may also use a portion of the net proceeds to acquire or invest in businesses, assets, products and technologies that are complementary to our own, although we are not currently contemplating or negotiating any such acquisitions or investments.

The amounts and timing of our actual expenditures for each purpose may vary significantly depending upon numerous factors, including the status of our product development efforts, regulatory approvals, competition, marketing and sales activities and the market acceptance of any products we introduce.

Table of Contents

DESCRIPTION OF COMMON STOCK, PREFERRED STOCK AND DEPOSITARY SHARES

The following summary description of our capital stock summarizes general terms and provisions that apply to the capital stock. Because this is only a summary, it does not contain all of the information that may be important to you. This summary is subject to and qualified in its entirety by reference to our restated certificate of incorporation, as amended, by-laws, as amended, and the rights agreement, as amended, each of which are on file with the SEC. See [Where You Can Find More Information](#).

Authorized and Outstanding Capital Stock

Our authorized capital stock consists of 95,000,000 shares of common stock, par value \$0.01 per share, and 5,000,000 shares of preferred stock, par value \$0.01 per share, of which 95,000 shares are designated Series B Junior Participating Preferred Stock with a par value of \$0.001 per share. On June 24, 2011, there were 45,204,921 shares of common stock outstanding and no shares of preferred stock outstanding.

Common Stock

Holders of our common stock are entitled to one vote per share on all matters submitted to a vote of stockholders and may not cumulate votes for the election of directors. Common stockholders have the right to receive dividends as and when declared by the Board of Directors from funds legally available therefor, subject to any preferential dividend rights of any preferred stock then outstanding. Upon our dissolution or liquidation, common stockholders are entitled to receive all assets legally available for distribution to stockholders, subject to any preferential rights of any preferred stock then outstanding. Holders of common stock have no preemptive rights and have no rights to convert their common stock into any other securities.

Preferred Stock

Preferred stock may be issued from time to time in one or more series, each such series to have such terms as determined by our Board of Directors. Our Board of Directors has the authority to determine and fix such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including without limitation dividend rights, conversion rights, redemption privileges and liquidation preferences, without further vote or action by our stockholders. We will distribute a prospectus supplement with regard to each particular series of preferred stock that will describe the terms and provisions of that series of preferred stock. The rights of the holders of any preferred stock that may be issued may adversely affect the rights of the holders of common stock. The issuance of preferred stock could make it more difficult for third parties to acquire a majority of our outstanding voting stock.

Preferred Stock Purchase Rights

In June 2002, our board of directors adopted a stockholder rights plan and, pursuant thereto, issued preferred stock purchase rights ([Rights](#)) to the holders of our common stock. Each share of common stock issued after adoption of the rights plan also includes one preferred share purchase right. The Rights have certain anti-takeover effects. If triggered, the Rights would cause substantial dilution to a person or group of persons who acquires more than 15% (19.9% for William W. Featheringill, a former director who beneficially owned approximately 7.5% as of June 10, 2011 but owned more than 15% at the time the Rights were put in place) of our common stock on terms not approved by the board of directors. In August 2007, this plan was amended for a transaction involving funds managed by or affiliated with Baker Brother Investments such that they could purchase up to 25% without triggering the Rights. On June 10, 2011, such group beneficially owned approximately 15.8% of our stock. The rights are not exercisable until the distribution date, as defined in the Rights Agreement, dated June 17, 2002, by and between the Company and American Stock Transfer & Trust Company, as Rights Agent, as amended. The Rights will expire at the close of business on June 24, 2012, unless that final expiration date is extended or unless the rights are earlier redeemed or exchanged by the Company.

Table of Contents

Each Right entitles the registered holder to purchase from the Company one one-thousandth of a share of Series B Junior Participating Preferred Stock (Series B), par value \$0.001 per share, at a purchase price of \$26.00, subject to adjustment. Shares of Series B purchasable upon exercise of the Rights will not be redeemable. Each share of Series B will be entitled to a dividend of 1,000 times the dividend declared per share of common stock. In the event of liquidation, each share of Series B will be entitled to a payment of 1,000 times the payment made per share of common stock. Each share of Series B will have 1,000 votes, voting together with the common stock. Finally, in the event of any merger, consolidation, or other transaction in which shares of common stock are exchanged, each share of Series B will be entitled to receive 1,000 times the amount received per share of common stock.

Anti-Takeover Provisions

Our certificate of incorporation provides for staggered terms for the members of the board of directors and supermajority approval of the removal of any member of the board of directors and prevents our stockholders from acting by written consent. Our certificate also requires supermajority approval of any amendment of these provisions. These provisions and other provisions of our by-laws and of Delaware law applicable to us could delay or make more difficult a merger, tender offer or proxy contest involving us.

Depositary Shares

We may, at our option, elect to offer fractional shares of preferred stock, rather than full shares of preferred stock. If we exercise this option, we will issue to the public receipts for depositary shares, and each of these depositary shares will represent a fraction, to be set forth in the applicable prospectus supplement, of a share of a particular series of preferred stock.

The shares of any series of preferred stock underlying the depositary shares will be deposited under a deposit agreement between us and a bank or trust company selected by us. The depositary will have its principal office in the United States and a combined capital and surplus of at least \$50,000,000. Subject to the terms of the deposit agreement, each owner of a depositary share will be entitled, in proportion to the applicable fraction of a share of preferred stock underlying the depositary share, to all the rights and preferences of the preferred stock underlying that depositary share. Those rights may include dividend, voting, redemption, conversion and liquidation rights.

The depositary shares will be evidenced by depositary receipts issued under a deposit agreement. Depositary receipts will be distributed to those persons purchasing the fractional shares of preferred stock underlying the depositary shares, in accordance with the terms of the offering. The following description of the material terms of the deposit agreement, the depositary shares and the depositary receipts is only a summary and you should refer to the forms of the deposit agreement and depositary receipts that will be filed with the SEC in connection with the offering of the specific depositary shares.

Pending the preparation of definitive engraved depositary receipts, the depositary, upon our written order, may issue temporary depositary receipts substantially identical to the definitive depositary receipts but not in definitive form. These temporary depositary receipts would entitle their holders to all the rights of definitive depositary receipts. Temporary depositary receipts would be exchangeable for definitive depositary receipts at our expense.

Dividends and Other Distributions. The depositary will distribute all cash dividends or other cash distributions received with respect to the underlying stock to the record holders of depositary shares in proportion to the number of depositary shares owned by those holders.

If there were a distribution other than in cash, the depositary would distribute property received by it to the record holders of depositary shares that are entitled to receive the distribution, unless the depositary determines that it is not feasible to make the distribution. If this occurs, the depositary, with our approval, would sell the property and distribute the net proceeds from the sale to the applicable holders.

Table of Contents

Withdrawal of Underlying Preferred Stock. Unless we provide otherwise in a prospectus supplement, holders may surrender depositary receipts at the principal office of the depositary and, upon payment of any unpaid amount due to the depositary, would be entitled to receive the number of whole shares of underlying preferred stock and all money and other property represented by the related depositary shares. We will not issue any partial shares of preferred stock. If the holder delivers depositary receipts evidencing a number of depositary shares that represent more than a whole number of shares of preferred stock, the depositary will issue a new depositary receipt evidencing the excess number of depositary shares to that holder.

Redemption of Depositary Shares. If a series of preferred stock represented by depositary shares were subject to redemption, the depositary shares would be redeemed from the proceeds received by the depositary resulting from the redemption, in whole or in part, of that series of underlying stock held by the depositary. The redemption price per depositary share would be equal to the applicable fraction of the redemption price per share payable with respect to that series of underlying stock. Whenever we redeem shares of underlying stock that are held by the depositary, the depositary will redeem, as of the same redemption date, the number of depositary shares representing the shares of underlying stock so redeemed. If fewer than all the depositary shares are to be redeemed, the depositary shares to be redeemed will be selected by lot or proportionately, as may be determined by the depositary.

Voting. Upon receipt of notice of any meeting at which the holders of the underlying stock are entitled to vote, the depositary will mail the information contained in the notice to the record holders of the depositary shares underlying the preferred stock. Each record holder of the depositary shares on the record date, which will be the same date as the record date for the underlying stock, will be entitled to instruct the depositary as to the exercise of the voting rights pertaining to the amount of the underlying stock represented by that holder's depositary shares. The depositary will then try, as far as practicable, to vote the number of shares of preferred stock underlying those depositary shares in accordance with those instructions, and we will agree to take all actions which may be deemed necessary by the depositary to enable the depositary to do so. The depositary will not vote the underlying shares to the extent it does not receive specific instructions from the holders of depositary shares underlying the preferred stock.

Conversion of Preferred Stock. If the prospectus supplement relating to the depositary shares provides that the deposited preferred stock is convertible into or exchangeable for common stock or preferred stock of another series of BioCryst or securities of any third party, the following will apply. The depositary shares, as such, will not be convertible into or exchangeable for any securities of BioCryst or any third party. Rather, any holder of the depositary shares may surrender the related depositary receipts to the depositary with written instructions to instruct us to cause conversion or exchange of the preferred stock represented by the depositary shares into or for whole shares of common stock or shares of another series of preferred stock of BioCryst or securities of the relevant third party, as applicable. Upon receipt of those instructions and any amounts payable by the holder in connection with the conversion or exchange, we will cause the conversion or exchange using the same procedures as those provided for conversion or exchange of the deposited preferred stock. If only some of the depositary shares are to be converted or exchanged, a new depositary receipt or receipts will be issued for any depositary shares not to be converted or exchanged.

Amendment and Termination of the Depositary Agreement. The form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement may be amended at any time by agreement between us and the depositary. However, any amendment which materially and adversely alters the rights of the holders of depositary shares will not be effective unless the amendment has been approved by the holders of at least a majority of the depositary shares then outstanding. The deposit agreement may be terminated by us or by the depositary only if (a) all outstanding depositary shares have been redeemed or converted or exchanged for any other securities into which the underlying preferred stock is convertible or exchangeable or (b) there has been a final distribution of the underlying stock in connection with our liquidation, dissolution or winding up and the underlying stock has been distributed to the holders of depositary receipts.

Table of Contents

Charges of Depositary. We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will also pay charges of the depositary in connection with the initial deposit of the underlying stock and any redemption of the underlying stock. Holders of depositary receipts will pay other transfer and other taxes and governmental charges and those other charges, including a fee for any permitted withdrawal of shares of underlying stock upon surrender of depositary receipts, as are expressly provided in the deposit agreement to be for their accounts.

Reports. The depositary will forward to holders of depositary receipts all reports and communications from us that we deliver to the depositary and that we are required to furnish to the holders of the underlying stock.

Limitation on Liability. Neither we nor the depositary will be liable if either of us is prevented or delayed by law or any circumstance beyond our control in performing our respective obligations under the deposit agreement. Our obligations and those of the depositary will be limited to performance in good faith of our respective duties under the deposit agreement. Neither we nor the depositary will be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or underlying stock unless satisfactory indemnity is furnished. We and the depositary may rely upon written advice of counsel or accountants, or upon information provided by persons presenting underlying stock for deposit, holders of depositary receipts or other persons believed to be competent and on documents believed to be genuine.

Resignation and Removal of Depositary. The depositary may resign at any time by delivering notice to us of its election to resign. We may remove the depositary at any time. Any resignation or removal will take effect upon the appointment of a successor depositary and its acceptance of the appointment. The successor depositary must be appointed within 60 days after delivery of the notice of resignation or removal and must be a bank or trust company having its principal office in the United States and having a combined capital and surplus of at least \$50,000,000.

Table of Contents

DESCRIPTION OF STOCK PURCHASE CONTRACTS

The following is a general description of the terms of the stock purchase contracts we may issue from time to time. Particular terms of any stock purchase contracts we offer will be described in the prospectus supplement relating to such stock purchase contracts. Material U.S. federal income tax considerations applicable to the stock purchase contracts will also be discussed in the applicable prospectus supplement. You should refer to the form of stock purchase contract and stock purchase certificate that we will file with the SEC in connection with the offering of the specific stock purchase contracts for more complete information.

We may issue stock purchase contracts, including contracts obligating holders to purchase from us, and obligating us to sell to holders, a specified number of shares of common stock, preferred stock or depositary shares at a future date. The consideration per share of common stock, preferred stock or depositary shares may be fixed at the time that the stock purchase contracts are issued or may be determined by reference to a specific formula set forth in the stock purchase contracts. Any stock purchase contract may include anti-dilution provisions to adjust the number of shares issuable pursuant to such stock purchase contract upon the occurrence of certain events.

The applicable prospectus supplement will describe the terms of any stock purchase contracts in respect of which this prospectus is being delivered, including, to the extent applicable, the following:

whether the stock purchase contracts obligate the holder or us to purchase or sell, or both purchase and sell, the securities subject to purchase under the stock purchase contract, and the nature and amount of each of those securities, or the method of determining those amounts;

whether the stock purchase contracts are to be prepaid or not;

whether the stock purchase contracts will be issued as part of a unit and, if so, the other securities comprising the unit;

whether the stock purchase contracts are to be settled by delivery, or by reference or linkage to the value, performance, or level of the securities subject to purchase under the stock purchase contract;

any acceleration, cancellation, termination, or other provisions relating to the settlement of the stock purchase contracts; and

whether the stock purchase contracts will be issued in full registered or global form.

Table of Contents

DESCRIPTION OF WARRANTS

We may issue warrants to purchase our preferred stock, depositary shares or common stock or any combination thereof. Warrants may be issued independently or together with any other securities in the form of units, and may be attached to, or separate from, such securities. The terms of any warrants to be issued and a description of the material provisions of the applicable warrant agreement will be set forth in the applicable prospectus supplement. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. You should refer to the form of warrant agreement and warrant that we file with the SEC in connection with the offering of the specific warrants for more complete information.

The prospectus supplement will describe the terms of any warrants being offered, including:

the title and the aggregate number of warrants;

the price or prices at which the warrants will be issued;

the currency or currencies in which the price of the warrants will be payable;

the securities or other rights, including rights to receive payment in cash or securities based on the value, rate or price of one or more specified commodities, currencies, securities or indices, or any combination of the foregoing, purchasable upon exercise of the warrants;

the price at which, and the currency or currencies in which, the securities or other rights purchasable upon exercise of such warrants may be purchased;

the periods during which, and places at which, the warrants are exercisable;

the date or dates on which the warrants shall commence and the date or dates on which the warrants will expire;

the terms of any mandatory or optional call provisions;

the price or prices, if any, at which the warrants may be redeemed at the option of the holder or will be redeemed upon expiration;

whether the warrants will be sold separately or with other securities as part of a unit;

if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security;

if applicable, the date on and after which the warrants and the related securities will be separately transferable;

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

any provisions for the adjustment of the number or amount of securities receivable upon exercise of warrants;

the identity of the warrant agent;

the exchanges, if any, on which the warrants may be listed;

the maximum or minimum number of warrants which may be exercised at any time;

if applicable, a discussion of any material United States federal income tax considerations;

whether the warrants shall be issued in book-entry form; and

any other terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

Table of Contents

DESCRIPTION OF UNITS

We may issue units consisting of one or more of the other securities described in this prospectus in any combination, as described in a prospectus supplement. We may issue units in one or more series, which will be described in a prospectus supplement. We will issue the units or hybrid securities under one or more unit agreements, each referred to as a unit agreement, to be entered into between us and a bank or trust company, as unit agent. You should refer to the form of unit agreement and unit certificate that we file with the SEC in connection with the offering of the specific units for more complete information.

The applicable prospectus supplement will describe:

the designation and the terms of the units and of the securities constituting the units, including whether and under what circumstances the securities comprising the units may be traded separately;

any additional terms of the governing unit agreement;

any additional provisions for the issuance, payment, settlement, transfer or exchange of the units or of the preferred stock, common stock, stock purchase contracts, depositary shares or warrants constituting the units; and

any applicable United States federal income tax consequences.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the securities being offered hereby at prices and under terms then prevailing, at prices related to the then current market price or in negotiated transactions from time to time in one or more of the following ways:

directly to one or more purchasers;

through one or more underwriters on a firm commitment or best-efforts basis;

through broker-dealers, who may act as agents or principals, including a block trade in which a broker or dealer so engaged will attempt to sell as agent but may position and resell a portion of the block as principal to facilitate the transaction;

through agents;

through remarketing firms;

in privately negotiated transactions; or

in any combination of these methods of sale.

We will set forth in a prospectus supplement the terms of the offering of securities, including:

the name or names of any underwriters, dealers or agents;

the number of securities and purchase price of the securities being offered and the proceeds we will receive from the sale;

any underwriting discounts and commissions or agency fees and other items constituting underwriters or agents compensation;

any over-allotment options under which underwriters may purchase additional securities from us;

any delayed delivery arrangements;

any discounts or concessions allowed or re-allowed or paid to dealers; and

any securities exchange on which the securities may be listed.

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

The distribution of the securities may be effected from time to time in one or more transactions at a fixed price or prices, which may be changed, at market prices prevailing at the time of sale, at prices related to the prevailing market prices or at negotiated prices.

In compliance with the guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum compensation or discount to be received by any FINRA member or independent broker dealer may not exceed eight percent of the offering proceeds from the securities offered pursuant to this prospectus and any applicable prospectus supplement.

We may designate agents who agree to use their reasonable efforts to solicit purchases for the period of their appointment or to sell securities on a continuing basis. Agents may receive compensation in the form of commissions, discounts or concessions from us. Agents may also receive compensation from the purchasers of the securities for whom they sell as principals. Each particular agent will receive compensation in amounts negotiated in connection with the sale, which might be in excess of customary commissions. Agents and any other participating broker-dealers may be deemed to be underwriters within the meaning of Section 2(11) of the Securities Act in connection with sales of the securities. Accordingly, any commission, discount or concession received by them and any profit on the resale of the securities purchased by them may be deemed to be underwriting discounts or commissions under the Securities Act. We have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their securities. As

Table of Contents

of the date of this prospectus, there are no special selling arrangements between any broker-dealer or other person and us. No period of time has been fixed within which the securities will be offered or sold.

If required under applicable state securities laws, we will sell the securities only through registered or licensed brokers or dealers. In addition, in some states, we may not sell securities unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and complied with.

If we use underwriters for a sale of securities, the underwriters will acquire the securities for their own account. The underwriters may resell the securities in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may change from time to time any initial public offering price and any discounts or concessions the underwriters allow or re-allow or pay to dealers. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement naming the underwriter the nature of any such relationship.

We may use a remarketing firm to offer to sell the securities in connection with a remarketing arrangement upon their purchase. Remarketing firms will act as principals for their own account or as agents for us. These remarketing firms will offer or sell the securities pursuant to the terms of the securities. A prospectus supplement will identify any remarketing firm and the terms of its agreement, if any, with us and will describe the remarketing firm's compensation. Remarketing firms may be deemed to be underwriters in connection with the securities they remarket.

If we offer and sell securities through a dealer, we or an underwriter will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. Any such dealer may be deemed to be an underwriter of the securities so offered and sold. The name of the dealer and the terms of the transactions will be set forth in the applicable prospectus supplement.

We may also sell securities directly to one or more purchasers without using underwriters or agents. Underwriters, dealers and agents that participate in the distribution of the securities may be underwriters as defined in the Securities Act and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act.

We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us in the ordinary course of their businesses.

We may authorize agents, dealers or underwriters to solicit offers to purchase securities at the public offering price under delayed delivery contracts. The terms of these delayed delivery contracts, including when payment for and delivery of the securities sold will be made under the contracts and any conditions to each party's performance set forth in the contracts, will be described in the applicable prospectus supplement. The compensation received by underwriters, agents or dealers soliciting purchases of securities under delayed delivery contracts will be described in the applicable prospectus supplement.

We may enter into derivative or other hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. We may also loan or pledge securities covered by this prospectus and the applicable

Table of Contents

prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement.

Unless otherwise specified in the related prospectus supplement, all securities we offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We may apply to list any series of securities on an exchange, but we are not obligated to do so. Therefore, no assurance can be given as to the liquidity of, or the trading market for, any series of securities.

Any underwriter may engage in overallocation, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Overallocation involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. These transactions may be effected on The NASDAQ Global Select Market or otherwise.

Any underwriters who are qualified market makers on The NASDAQ Global Select Market may engage in passive market making transactions in the common stock on The NASDAQ Global Select Market in accordance with Rule 103 of Regulation M, during the business day before the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

We will bear all costs, expenses and fees in connection with the registration of the securities, as well as the expense of all commissions and discounts, if any, attributable to sales of the securities by us.

Table of Contents

LEGAL MATTERS

Gibson, Dunn & Crutcher LLP has rendered an opinion with respect to the validity of the securities being offered by this prospectus. We have filed this opinion as an exhibit to the registration statement of which this prospectus is a part. If counsel for any underwriters passes on legal matters in connection with an offering made by this prospectus, we will name that counsel in the prospectus supplement relating to that offering.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2010, and the effectiveness of our internal control over financial reporting as of December 31, 2010, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance on Ernst & Young LLP's reports pertaining to such financial statements (to the extent covered by consents filed with the Securities and Exchange Commission), given on their authority as experts in accounting and auditing.

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We file electronically with the Securities and Exchange Commission our annual reports on Form 10-K, quarterly interim reports on Form 10-Q, current reports on Form 8-K, proxy statements and other information. We make available on or through our website, <http://www.biocryst.com>, free of charge, copies of these filings as soon as reasonably practicable after we electronically file them with or furnish them to the SEC. The information on our website is not incorporated by reference into this prospectus. You can also request copies of such documents by contacting our Investor Relations Department at 4505 Emperor Blvd., Suite 200, Durham, North Carolina 27703 or sending an email to info@biocryst.com. You may read and copy any document we file at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You can also obtain copies of this information by mail from the Public Reference Room of the SEC at prescribed rates. You may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330.

The SEC also maintains an Internet world wide web site that contains reports, proxy statements and other information about issuers, like BioCryst, that file electronically with the SEC. The address of that site is <http://www.sec.gov>. Unless specifically listed below under "Incorporation of Certain Documents by Reference" the information contained on the SEC website is not incorporated by reference into this prospectus.

We have filed with the SEC a registration statement on Form S-3 that registers the securities we are offering. The registration statement, including the attached exhibits and schedules, contains additional relevant information about us and our securities. The rules and regulations of the SEC allow us to omit certain information included in the registration statement from this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information into this prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus, except for any information that is superseded by information that is included directly in this document.

This prospectus includes by reference the documents listed below that we have previously filed with the SEC and that are not included in or delivered with this document. They contain important information about us and our financial condition.

Our Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC on March 15, 2011;

Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2011, filed with the SEC on May 6, 2011;

Our Current Reports on Form 8-K filed with the SEC on January 12, 2011, January 21, 2011, February 10, 2011, February 18, 2011, February 24, 2011 (two filed on this date), May 3, 2011, May 17, 2011, May 25, 2011 and June 27, 2011;

The description of our common stock which is contained in our Registration Statement on Form 8-A (File No. 000-23186) filed with the SEC on January 7, 1994, together with the amendment thereto filed with the SEC on March 14, 1994, including any other amendment or reports filed for the purpose of updating such description; and

The description of our preferred share purchase rights which is contained in our Registration Statement on Form 8-A (File No. 000-23186) filed with the SEC on June 17, 2002, including any amendment or reports filed for the purpose of updating such description.

Table of Contents

All documents filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after the date of the initial registration statement and prior to effectiveness of the registration statement and on or after the date of this prospectus and prior to the termination of our offering of securities shall be deemed to be incorporated by reference herein and to be a part of this prospectus from the date of filing of such documents, excluding any information furnished under Item 2.02 or Item 7.01 of any Current Report on Form 8-K and exhibits filed on such form that are related to such items. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You can obtain any of the documents incorporated by reference in this prospectus from us without charge, excluding any exhibits to those documents unless the exhibit is specifically incorporated by reference as an exhibit to this prospectus. You can obtain documents incorporated by reference in this prospectus at no cost by requesting them in writing or by telephone from us at the following address:

Investor Relations

BioCryst Pharmaceuticals, Inc.

4505 Emperor Blvd., Suite 200

Durham, North Carolina 27703

(919) 859-1302

We have not authorized anyone to give any information or make any representation about us that is different from, or in addition to, that contained in this prospectus or in any of the materials that we have incorporated by reference into this document. Therefore, if anyone does give you information of this sort, you should not rely on it. If you are in a jurisdiction where offers to sell, or solicitations of offers to purchase, the securities offered by this document are unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented in this document does not extend to you.

Table of Contents

BioCryst Pharmaceuticals, Inc.

\$70,000,000

Common Stock

Preferred Stock

Depositary Shares

Stock Purchase Contracts

Warrants

Units

PROSPECTUS

, 2011

Table of Contents

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission becomes effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JUNE 28, 2011

PROSPECTUS

\$70,000,000

Common Stock

You should carefully read this prospectus before you invest. It contains information you should consider before making your investment decision.

This prospectus relates to the issuance and sale of our common stock from time to time having an aggregate offering price of up to \$70.0 million through our sales agent, McNicoll, Lewis & Vlak LLC (MLV). These sales, if any, will be made pursuant to the terms of an At Market Issuance Sales Agreement (the Sales Agreement) entered into between us and MLV on June 28, 2011, a copy of which was filed with the Securities and Exchange Commission (the SEC) as an exhibit to the registration statement of which this prospectus forms a part, and is incorporated herein by reference.

Our common stock, par value \$0.01 per share, trades on The NASDAQ Global Select Market (NASDAQ) under the symbol BCRX. On June 27, 2011, the closing price of our common stock as reported on NASDAQ was \$3.80 per share. Sales of shares of our common stock under this prospectus, if any, may be made in privately negotiated transactions and/or any other method permitted by law, including sales deemed to be an at the market offering as defined in Rule 415 under the Securities Act of 1933, as amended, which includes sales made directly on NASDAQ, the existing trading market for our common stock, or sales made to or through a market maker other than on an exchange. The sales agent will make all sales using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreeable terms between the sales agent and us.

Unless we and our sales agent otherwise agree, we will pay our sales agent a commission equal to (i) 3.0% of the gross proceeds from the sale of the first \$30.0 million of common stock offered hereby, or (ii) 2.0% of the gross proceeds from the sale of any additional common stock offered hereby. Any other fee arrangement or commission amount to be received by the sales agent will be disclosed in a separate prospectus supplement for such shares. The net proceeds to us that we receive from sales of our common stock will depend on the number of shares actually sold and the offering price for such shares. After giving effect to the sale of our common stock in the maximum aggregate offering amount of \$70.0 million at an assumed offering price of \$3.80 per share, the last reported sale price of our common stock on The NASDAQ Global Select Market on June 27, 2011, we would receive \$70.0 million in gross proceeds, or \$68.3 million in aggregate net proceeds assuming the sales agent fee is paid as described above. The actual proceeds to us will vary.

In connection with the sale of common stock on our behalf, the sales agent will be deemed an underwriter within the meaning of the Securities Act of 1933, as amended, and the compensation of the sales agent will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to the sales agent against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information or to make additional representations. We are not making or soliciting an offer of any securities other than the Common Stock described in this prospectus. We are not making or soliciting an offer of these securities in any state or jurisdiction where the offer is not permitted or in any circumstances in which such offer or solicitation is unlawful. You should not assume that the information contained or incorporated by reference in this prospectus is accurate as of any date other than the date on the front of those documents.

Investing in these securities involves a high degree of risk. See Risk Factors on page A-3 of this prospectus, and in the documents incorporated herein by reference.

Neither the SEC nor any state securities commission has approved or disapproved of these securities, or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2011.

Table of Contents

TABLE OF CONTENTS

	Page
<u>ABOUT THIS PROSPECTUS</u>	A-i
<u>PROSPECTUS SUMMARY</u>	A-1
<u>THE OFFERING</u>	A-2
<u>RISK FACTORS</u>	A-3
<u>INFORMATION REGARDING FORWARD-LOOKING STATEMENTS</u>	A-18
<u>USE OF PROCEEDS</u>	A-20
<u>DILUTION</u>	A-21
<u>PRICE RANGE OF COMMON STOCK AND DIVIDEND POLICY</u>	A-22
<u>PLAN OF DISTRIBUTION</u>	A-23
<u>LEGAL MATTERS</u>	A-24
<u>EXPERTS</u>	A-24
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	A-25
<u>INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</u>	A-25

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC, using a shelf registration or continuous offering process. Under this registration statement, we may sell any combination of the securities described in such registration statement from time to time, either separately or in units, in one or more offerings. Together, these offerings (including any offerings under this prospectus) may total up to \$70.0 million.

All references to Company we, our or us refer solely to BioCryst Pharmaceuticals, Inc. and not to the persons who manage us or sit on our Board of Directors. All trade names used in this prospectus are either our registered trademarks or trademarks of their respective holders.

You should rely only on the information contained in this prospectus and the documents we incorporate by reference in this prospectus. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information contained in this prospectus, as well as the information that we have filed with the SEC, and incorporated by reference herein, is accurate only as of the date of the applicable document. This prospectus does not constitute an offer or solicitation by anyone in any jurisdiction in which an offer or solicitation is not authorized or in which the person making an offer or solicitation is not qualified to do so, or to anyone to whom it is unlawful to make an offer or solicitation.

The information contained in this prospectus is correct only as of the date on the cover, regardless of the date this prospectus was delivered to you or the date on which you acquired any of the shares.

Table of Contents

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere or incorporated by reference into this prospectus. Because it is a summary, it does not contain all of the information that you should consider before investing in our securities. You should read this entire prospectus carefully, including the section entitled **Risk Factors** and the documents that we incorporate by reference into this prospectus, before making an investment decision.

Business of BioCryst Pharmaceuticals, Inc.

We are a biotechnology company that designs, optimizes and develops novel drugs that block key enzymes involved in therapeutic areas of interest to us. Areas of interest are determined primarily by the scientific discoveries and the potential advantages that our experienced drug discovery group develops in the laboratory along with the potential commercial opportunity of these discoveries. We integrate the disciplines of biology, crystallography, medicinal chemistry and computer modeling to discover and develop small molecule pharmaceuticals through the process known as structure-based drug design.

Structure-based drug design is a drug discovery approach by which we design synthetic compounds from detailed structural knowledge of the active sites of enzyme targets associated with particular diseases. We use X-ray crystallography, computer modeling of molecular structures and advanced chemistry techniques to focus on the three-dimensional molecular structure and active site characteristics of the enzymes that control cellular biology. Enzymes are proteins that act as catalysts for many vital biological reactions. Our goal generally is to design a compound that will fit in the active site of an enzyme and thereby interfere with the progression of disease. We currently have three principal products:

Peramivir, a neuraminidase inhibitor for the potential treatment of influenza;

BCX4208, a next generation purine nucleoside phosphorylase (PNP) inhibitor for gout; and

Forodesine, a PNP inhibitor for cutaneous T-cell lymphoma and chronic lymphocytic leukemia.

In addition to our principal products, we invest in our drug discovery team and retain exclusive rights to other compounds in a number of therapeutic areas. These compounds are currently in pre-clinical development and include potent inhibitors of parainfluenza hemagglutinin, neuraminidase, influenza neuraminidase, hepatitis C RNA polymerase, JAK inhibitors, plasma kallikrein and additional PNP inhibitors. We will continue to evaluate and test these compounds to determine which should be taken forward into clinical testing.

BioCryst is a Delaware corporation originally founded in 1986. Our principal offices are located at 4505 Emperor Blvd. Suite 200, Durham, North Carolina 27703, and our telephone number is (919) 859-1302. Our web site is located at <http://www.biocryst.com>. The information on our web site is not incorporated by reference into this prospectus.

Table of Contents

THE OFFERING

Issuer	BioCryst Pharmaceuticals, Inc.
Common Stock Offered by us Pursuant to this Prospectus	Shares having an aggregate offering price of up to \$70.0 million.
Common Stock to be Outstanding after this Offering if All Shares are Sold	Assuming all \$70.0 million of shares of our common stock are sold at an assumed offering price of \$3.80 per share, the last reported sale price of our common stock on The NASDAQ Global Select Market on June 27, 2011, we would have 63,625,974 shares of common stock outstanding.
Maximum Gross Proceeds	\$70.0 million
Manner of Offering	Sales of shares of our common stock under this prospectus, if any, may be made in privately negotiated transactions and/or any other method permitted by law, including sales deemed to be an at the market offering as defined in Rule 415 under the Securities Act of 1933, as amended, which includes sales made directly on The NASDAQ Global Select Market, the existing trading market for our common stock, or sales made to or through a market maker other than on an exchange. The sales agent will make all sales using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreeable terms between the sales agent and us. See Plan of Distribution.
Sales Agent	McNicoll, Lewis & Vlak LLC
NASDAQ Symbol	BCRX
Use of Proceeds	The net proceeds of this offering will be added to our general funds and other general corporate purposes as further described in this prospectus under the heading Use of Proceeds.
Risk Factors	See Risk Factors beginning on page A-3 and the other information included in, or incorporated by reference into, this prospectus for a discussion of certain factors you should carefully consider before deciding to invest in shares of our common stock.
The number of shares to be outstanding after this offering is based on 45,204,921 shares outstanding as of June 24, 2011 and excludes:	

3,159,895 shares of common stock issuable upon the exercise of warrants at an exercise price of \$10.25 per share; and

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

7,950,469 shares of common stock issuable upon the exercise of stock options outstanding under our stock option plans at a weighted average exercise price of \$6.32 per share and 2,105,111 additional shares of common stock reserved for issuance under our stock option plan.

A-2

Table of Contents

RISK FACTORS

Investing in our securities involves risks. Our business is influenced by many factors that are difficult to predict and beyond our control and that involve uncertainties that may materially affect our results of operations, financial condition or cash flows, or the value of these securities. These risks and uncertainties are described below and in the materials incorporated by reference herein. Subsequent prospectus supplements may contain a discussion of additional risks applicable to an investment in us and the particular type of securities we are offering under the prospectus supplements. You should carefully consider all of the information contained herein or incorporated by reference in this prospectus before you invest in our securities.

Risks Relating to this Offering

Our management will have broad discretion over the use of the net proceeds from this offering, you may not agree with how we use the proceeds and the proceeds may not be invested successfully.

We have not designated any portion of the net proceeds from this offering to be used for any particular purpose. Accordingly, our management will have broad discretion as to the use of the net proceeds from any offering by us and could use them for purposes other than those contemplated at the time of this offering. Accordingly, you will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the proceeds will be invested in a way that does not yield a favorable, or any, return for our Company.

You may experience immediate and substantial dilution in the book value per share of the common stock you purchase.

Because the prices per share at which shares of our common stock are sold in this offering may be substantially higher than the book value per share of our common stock, you may suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. The shares sold in this offering, if any, will be sold from time to time at various prices. After giving effect to the sale of our common stock in the maximum aggregate offering amount of \$70.0 million at an assumed offering price of \$3.80 per share, the last reported sale price of our common stock on The NASDAQ Global Select Market on June 27, 2011, and after deducting estimated offering commissions payable by us, our net tangible book value as of March 31, 2011 would have been \$122.5 million, or \$1.93 per share of common stock. This represents an immediate increase in the net tangible book value of \$0.73 per share to our existing stockholders and an immediate and substantial dilution in net tangible book value of \$1.87 per share to new investors who purchase our common stock in the offering. See [Dilution](#) for a more detailed discussion of the dilution you may incur in connection with this offering.

Our stock price is likely to be highly volatile and the value of your investment could decline significantly.

The market prices for securities of biotechnology companies in general have been highly volatile and may continue to be highly volatile in the future. Moreover, our stock price has fluctuated frequently, and these fluctuations are often not related to our financial results. For the twelve months ended March 31, 2011, the 52-week range of the market price of our stock was from \$3.36 to \$7.89 per share. The following factors, in addition to other risk factors described in this section, may have a significant impact on the market price of our common stock:

announcements of technological innovations or new products by us or our competitors;

developments or disputes concerning patents or proprietary rights;

additional dilution through sales of our common stock or other derivative securities;

status of new or existing licensing or collaborative agreements and government contracts;

Table of Contents

announcements relating to the status of our programs;

we or our partners achieving or failing to achieve development milestones;

publicity regarding actual or potential medical results relating to products under development by us or our competitors;

publicity regarding certain public health concerns for which we are or may be developing treatments;

regulatory developments in both the United States and foreign countries;

public concern as to the safety of pharmaceutical products;

actual or anticipated fluctuations in our operating results;

changes in financial estimates or recommendations by securities analysts;

changes in the structure of healthcare payment systems, including developments in price control legislation;

announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;

additions or departures of key personnel or members of our board of directors;

purchases or sales of substantial amounts of our stock by existing stockholders, including officers or directors;

economic and other external factors or other disasters or crises; and

period-to-period fluctuations in our financial results.

Because our stock ownership is concentrated, you and other investors will have limited influence on stockholder decisions. In addition, substantial sales of shares may impact the market price of our common stock.

As of March 31, 2011, our directors, executive officers and our stockholders who hold 5% or greater of our outstanding common stock, beneficially owned a significant portion of our outstanding common stock and common stock equivalents. As a result, these holders will likely be able to significantly influence our operations and matters requiring stockholder approval, including the election of directors. The interests of these stockholders may be different from the interests of other stockholders and they could take actions that might not be considered by other stockholders to be in their best interests. This concentration of ownership may delay, defer or prevent a change in our control.

In addition, if any of these significant stockholders sell substantial amounts of our common stock, the market price of our common stock may decline. These sales also might make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we consider appropriate. We are unable to predict when or if any of these stockholders may choose to sell their shares, nor can we predict the effect

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

that sales may have on the then prevailing market price of our common stock.

We have anti-takeover provisions in our corporate charter documents that may result in outcomes with which you do not agree.

Our board of directors has the authority to issue up to 4,905,000 shares of undesignated preferred stock and to determine the rights, preferences, privileges and restrictions of those shares without further vote or action by our stockholders. The rights of the holders of any preferred stock that may be issued in the future may adversely affect the rights of the holders of common stock. The issuance of preferred stock could make it more difficult for third parties to acquire a majority of our outstanding voting stock.

A-4

Table of Contents

In addition, our certificate of incorporation provides for staggered terms for the members of the board of directors and supermajority approval of the removal of any member of the board of directors and prevents our stockholders from acting by written consent. Our certificate also requires supermajority approval of any amendment of these provisions. These provisions and other provisions of our by-laws and of Delaware law applicable to us could delay or make more difficult a merger, tender offer or proxy contest involving us.

In June 2002, our board of directors adopted a stockholder rights plan and, pursuant thereto, issued preferred stock purchase rights, referred to as the Rights, to the holders of our common stock. The Rights have certain anti-takeover effects. If triggered, the Rights would cause substantial dilution to a person or group of persons who acquires more than 15% of our common stock on terms not approved by the board of directors.

We have never paid dividends on our common stock and do not anticipate doing so in the foreseeable future.

We have never paid cash dividends on our stock. We currently intend to retain all future earnings, if any, for use in the operation of our business. Accordingly, we do not anticipate paying cash dividends on our common stock in the foreseeable future.

Exercise of outstanding options and warrants will dilute stockholders and could decrease the market price of our common stock.

As of June 24, 2011, we had outstanding approximately 45.2 million shares of common stock, outstanding options to purchase approximately 8.0 million additional shares of common stock and warrants (exercisable at \$10.25 per share) to purchase an additional 3.2 million shares of our common stock. The existence of the outstanding options and warrants may adversely affect the market price of our common stock and the terms under which we could obtain additional equity capital.

Risks Relating to Our Business

We have incurred substantial losses since our inception in 1986, expect to continue to incur such losses, and may never be profitable.

Since our inception in 1986, we have not been profitable. We expect to incur additional losses for the foreseeable future, and our losses could increase as our research and development efforts progress. To become profitable, we must successfully manufacture and develop drug product candidates, receive regulatory approval, and successfully commercialize or enter into profitable agreements with other parties. It could be several years, if ever, before we receive royalties from any current or future license agreements or revenues directly from product sales.

Because of the numerous risks and uncertainties associated with developing our product candidates and their potential for commercialization, we are unable to predict the extent of any future losses. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. If we are unable to achieve and sustain profitability, the market value of our common stock will likely decline.

Our success depends upon our ability to advance our products through the various stages of development, especially through the clinical trial process.

To receive the regulatory approvals necessary for the sale of our product candidates, we or our partners must demonstrate through preclinical studies and clinical trials that each product candidate is safe and effective. The clinical trial process is complex and uncertain. Because of the cost and duration of clinical trials, we may decide to discontinue development of product candidates that are unlikely to show good results in the trials, unlikely to help advance a product to the point of a meaningful collaboration, or unlikely to have a reasonable commercial potential. We may suffer significant setbacks in pivotal clinical trials, even after earlier clinical trials show promising results. Clinical trials may not be adequately designed or executed, which could affect the potential

Table of Contents

outcome and analysis of study results. Any of our product candidates may produce undesirable side effects in humans. These side effects could cause us or regulatory authorities to interrupt, delay or halt clinical trials of a product candidate. These side effects could also result in the U.S. Food and Drug Administration (the "FDA") or foreign regulatory authorities refusing to approve the product candidate for any targeted indications. We, our partners, the FDA or foreign regulatory authorities may suspend or terminate clinical trials at any time if we or they believe the trial participants face unacceptable health risks. Clinical trials may fail to demonstrate that our product candidates are safe or effective and have acceptable commercial viability.

Our ability to successfully complete clinical trials is dependent upon many factors, including but not limited to:

our ability to find suitable clinical sites and investigators to enroll patients;

the availability of and willingness of patients to participate in our clinical trials;

difficulty in maintaining contact with patients to provide complete data after treatment;

our product candidates may not prove to be either safe or effective;

clinical protocols or study procedures may not be adequately designed or followed by the investigators;

manufacturing or quality control problems could affect the supply of drug product for our trials; and

delays or changes in requirements by governmental agencies.

Clinical trials are lengthy and expensive. We or our partners incur substantial expense for, and devote significant time to, preclinical testing and clinical trials, yet cannot be certain that the tests and trials will ever result in the commercial sale of a product. For example, clinical trials require adequate supplies of drug and sufficient patient enrollment. Delays in patient enrollment can result in increased costs and longer development times. Even if we or our partners successfully complete clinical trials for our product candidates, we or our partners might not file the required regulatory submissions in a timely manner and may not receive regulatory approval for the product candidate.

Our clinical trials may not adequately show that our drugs are safe or effective.

Progression of our drug products through the clinical development process is dependent upon our trials indicating our drugs have adequate safety profiles and show positive therapeutic effects in the patients being treated by achieving pre-determined endpoints according to the trial protocols. Failure to achieve either of these could result in delays in our trials or even require the performance of additional unplanned trials. This could result in delays in the development of our product candidates and could result in significant unexpected costs.

If we fail to obtain additional financing, we may be unable to complete the development and commercialization of our product candidates or continue our research and development programs.

As our clinical programs continue to grow and patient enrollment increases, our costs will increase. Our current and planned clinical trials plus the related development, manufacturing, regulatory approval process requirements, and additional personnel resources and testing required for supporting the development of our product candidates will consume significant capital resources. Our expenses, revenues and burn rate could vary significantly depending on many factors, including our ability to raise additional capital, the development progress of our collaborative agreements for our product candidates, the amount of funding we receive from the U.S. Department of Health and Human Services ("HHS") for peramivir, the amount of funding or assistance, if any, we receive from other governmental agencies or other new partnerships with third parties for the development of our product candidates, the amount or profitability of any orders for peramivir by any government agency or other party, the progress and results of our current and proposed clinical trials for our most advanced drug products, the progress made in the manufacturing

of our lead products and the progression of our other programs.

A-6

Table of Contents

We expect that we will be required to raise additional capital to complete the development and commercialization of our current product candidates and we may seek to raise capital at any time we deem market conditions to be favorable. Additional funding, whether through additional sales of securities or collaborative or other arrangements with corporate partners or from other sources, including governmental agencies, in general and from any HHS contract specifically, may not be available when needed or on terms acceptable to us. The issuance of preferred or common stock or convertible securities, with terms and prices significantly more favorable than those of the currently outstanding common stock, could have the effect of diluting or adversely affecting the holdings or rights of our existing stockholders. In addition, collaborative arrangements may require us to transfer certain material rights to such corporate partners. Insufficient funds may require us to delay, scale-back or eliminate certain of our research and development programs.

If HHS were to eliminate, reduce or delay funding from our contract, or dispute some of our incurred costs or other actions taken under the contract, this would have a significant negative impact on our revenues, cash flows and the development of peramivir.

Our projections of revenues and incoming cash flows are substantially dependent upon HHS reimbursement for the costs related to our peramivir program. If HHS were to eliminate, reduce or delay the funding for this program or disallow some of our incurred costs, we would have to obtain additional funding for development of this drug candidate or significantly reduce or stop the development effort. Further, HHS may challenge actions that we have taken or may take under our contract, which could negatively impact our operating results and cash flows.

In contracting with HHS, we are subject to various U.S. government contract requirements, including general clauses for a cost-reimbursement research and development contract, which may limit our reimbursement or if we are found to be in violation could result in contract termination. U.S. government contracts typically contain extraordinary provisions which would not typically be found in commercial contracts. For instance, government contracts permit unilateral modification by the government, interpretation of relevant regulations (i.e., federal acquisition regulation clauses), and the ability to terminate without cause. As such, we may be at a disadvantage as compared to other commercial contracts. In addition, U.S. government contracts are subject to audit and modification by the government at its sole discretion. If the government terminates its contract with us for its convenience or if we default by failing to perform in accordance with the contract schedule and terms, significant negative impact on our cash flows and operations could result.

Our contract with HHS has special contracting requirements, which create additional risks of reduction or loss of funding.

We have entered into a contract with HHS for the advanced development of our neuraminidase inhibitor, peramivir. We also have obligations with HHS under the Indefinite Delivery Indefinite Quantity contract issued in November 2009. In contracting with HHS, we are subject to various U.S. government contract requirements, including general clauses for a cost-reimbursement research and development contract. U.S. government contracts typically contain unfavorable termination provisions and are subject to audit and modification by the government at its sole discretion, which subjects us to additional risks. These risks include the ability of the U.S. government to unilaterally:

terminate or reduce the scope of our contract; and

audit and object to our contract-related costs and fees, including allocated indirect costs.

The U.S. government may terminate its contracts with us either for its convenience or if we default by failing to perform in accordance with the contract schedule and terms. Termination for convenience provisions generally enable us to recover only our costs incurred or committed, and settlement expenses and profit on the work completed prior to termination. Termination for default provisions does not permit these recoveries.

Table of Contents

As a U.S. government contractor, we are required to comply with applicable laws, regulations and standards relating to our accounting practices and are subject to periodic audits and reviews. As part of any such audit or review, the U.S. government may review the adequacy of, and our compliance with, our internal control systems and policies, including those relating to our purchasing, property, estimating, compensation and management information systems. Based on the results of its audits, the U.S. government may adjust our contract-related costs and fees, including allocated indirect costs. In addition, if an audit or review uncovers any improper or illegal activity, we may be subject to civil and criminal penalties and administrative sanctions, including termination of our contracts, forfeiture of profits, suspension of payments, fines and suspension or prohibition from doing business with the U.S. government. We could also suffer serious harm to our reputation if allegations of impropriety were made against us. In addition, under U.S. government purchasing regulations, some of our costs may not be reimbursable or allowed under our contracts. Further, as a U.S. government contractor, we are subject to an increased risk of investigations, criminal prosecution, civil fraud, whistleblower lawsuits and other legal actions and liabilities as compared to private sector commercial companies.

If we fail to successfully commercialize or establish collaborative relationships to commercialize certain of our drug product candidates or if any partner terminates or fails to perform its obligations under agreements with us, potential revenues from commercialization of our product candidates could be reduced, delayed or eliminated.

Our business strategy is to increase the asset value of our drug candidate portfolio. We believe this is best achieved by retaining full product rights or through collaborative arrangements with third parties as appropriate. As needed, potential third-party alliances could include preclinical development, clinical development, regulatory approval, marketing, sales and distribution of our drug product candidates.

Currently, we have established collaborative relationships with Mundipharma International Holdings Limited (Mundipharma) for the development and commercialization of forodesine and with each of Shionogi & Co., Ltd. (Shionogi) and Green Cross Corporation (Green Cross) for the development and commercialization of peramivir. The process of establishing and implementing collaborative relationships is difficult, time-consuming and involves significant uncertainty, including:

our partners may seek to renegotiate or terminate their relationships with us due to unsatisfactory clinical results, a change in business strategy, a change of control or other reasons;

our contracts for collaborative arrangements may expire;

our partners may choose to pursue alternative technologies, including those of our competitors;

we may have disputes with a partner that could lead to litigation or arbitration;

we do not have day to day control over the activities of our partners and have limited control over their decisions;

our ability to generate future event payments and royalties from our partners depends upon their abilities to establish the safety and efficacy of our product candidates, obtain regulatory approvals and achieve market acceptance of products developed from our product candidates;

we or our partners may fail to properly initiate, maintain or defend our intellectual property rights, where applicable, or a party may utilize our proprietary information in such a way as to invite litigation that could jeopardize or potentially invalidate our proprietary information or expose us to potential liability;

our partners may not devote sufficient capital or resources towards our product candidates; and

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

our partners may not comply with applicable government regulatory requirements. If any partner fails to fulfill its responsibilities in a timely manner, or at all, our commercialization efforts related to that collaboration could be reduced, delayed or terminated, or it may be necessary for us to assume

A-8

Table of Contents

responsibility for activities that would otherwise have been the responsibility of our partner. If we are unable to establish and maintain collaborative relationships on acceptable terms, we may have to delay or discontinue further development of one or more of our product candidates, undertake commercialization activities at our own expense or find alternative sources of funding. Any delay in the development or commercialization of our compounds would severely affect our business, because if our compounds do not progress through the development process or reach the market in a timely manner, or at all, we may not receive additional future event payments and may never receive product or royalty payments.

We have not commercialized any products or technologies and our future revenue generation is uncertain.

We have not commercialized any products or technologies, and we may never be able to do so. We currently have no marketing capability and no direct or third-party sales or distribution capabilities and may be unable to establish these capabilities for products we plan to commercialize. In addition, our revenue from collaborative agreements is dependent upon the status of our preclinical and clinical programs. If we fail to advance these programs to the point of being able to enter into successful collaborations, we will not receive any future event or other collaborative payments.

Our ability to receive revenue from products we commercialize presents several risks, including:

we or our collaborators may fail to successfully complete clinical trials sufficient to obtain FDA marketing approval;

many competitors are more experienced and have significantly more resources and their products could be more cost effective or have a better efficacy or tolerability profile than our product candidates;

we may fail to employ a comprehensive and effective intellectual property strategy which could result in decreased commercial value of our company and our products;

we may fail to employ a comprehensive and effective regulatory strategy which could result in a delay or failure in commercialization of our products;

our ability to successfully commercialize our products are affected by the competitive landscape, which cannot be fully known at this time;

reimbursement is constantly changing which could greatly affect usage of our products; and

any future revenue directly from product sales would depend on our ability to successfully complete clinical studies, obtain regulatory approvals, manufacture, market and commercialize any approved drugs.

If our development collaborations with third parties, such as our development partners and contract research organizations, fail, the development of our drug product candidates will be delayed or stopped.

We rely heavily upon other parties for many important stages of our drug development programs, including but not limited to:

discovery of compounds that cause or enable biological reactions necessary for the progression of the disease or disorder, called enzyme targets;

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

licensing or design of enzyme inhibitors for development as drug product candidates;

execution of some preclinical studies and late-stage development for our compounds and product candidates;

management of our clinical trials, including medical monitoring and data management;

execution of additional toxicology studies that may be required to obtain approval for our product candidates; and

manufacturing the starting materials and drug substance required to formulate our drug products and the drug products to be used in both our clinical trials and toxicology studies.

A-9

Table of Contents

Our failure to engage in successful collaborations at any one of these stages would greatly impact our business. If we do not license enzyme targets or inhibitors from academic institutions or from other biotechnology companies on acceptable terms, our product development efforts would suffer. Similarly, if the contract research organizations that conduct our initial or late-stage clinical trials, conduct our toxicology studies, manufacture our starting materials, drug substance and drug products or manage our regulatory function breached their obligations to us or perform their services inconsistent with industry standards and not in accordance with the required regulations, this would delay or prevent the development of our product candidates.

If we lose our relationship with any one or more of these parties, we could experience a significant delay in both identifying another comparable provider and then contracting for its services. We may be unable to retain an alternative provider on reasonable terms, if at all. Even if we locate an alternative provider, it is likely that this provider may need additional time to respond to our needs and may not provide the same type or level of service as the original provider. In addition, any provider that we retain will be subject to applicable FDA current Good Laboratory Practices (cGLP), current Good Manufacturing Practices (cGMP) and current Good Clinical Practices (cGCP), and comparable foreign standards. We do not have control over compliance with these regulations by these providers. Consequently, if these practices and standards are not adhered to by these providers, the development and commercialization of our product candidates could be delayed, and our business, financial condition and results of operations could be materially adversely affected.

Our development of peramivir for influenza is subject to all disclosed drug development and potential commercialization risks and numerous additional risks. Any potential revenue benefits to us are highly speculative.

Further development and potential commercialization of peramivir is subject to all the risks and uncertainties disclosed in our other risk factors relating to drug development and commercialization. In addition, potential commercialization of peramivir is subject to further risks, including but not limited to the following:

the peramivir i.v. currently in clinical development may not prove to be safe and sufficiently effective for market approval in the United States or other major markets;

necessary government or other third party funding and clinical testing for further development of peramivir may not be available timely, at all, or in sufficient amounts;

the flu prevention or pandemic treatment concerns may not materialize at all, or in the near future;

advances in flu vaccines or other antivirals, including competitive i.v. antivirals, could substantially replace potential demand for peramivir;

any substantial demand for pandemic or seasonal flu treatments may occur before peramivir can be adequately developed and tested in clinical trials;

peramivir may not prove to be accepted by patients and physicians as a treatment for seasonal influenza compared to the other currently marketed antiviral drugs, which would limit revenue from non-governmental entities;

numerous large and well-established pharmaceutical and biotech companies will be competing to meet the market demand for flu drugs and vaccines;

the only major markets in which patents relating to peramivir have issued or been allowed are the United States, Canada, Japan, Australia and many contracting and extension states of the European Union, while no patent applications or issued patents for

peramivir exist in other potentially significant markets;

regulatory authorities may not make needed accommodations to accelerate the drug testing and approval process for peramivir; and

A-10

Table of Contents

in the next few years, it is expected that a limited number of governmental entities will be the primary potential customers for peramivir and if we are not successful at marketing peramivir to these entities for any reason, we will not receive substantial revenues from stockpiling orders from these entities.

If any or all of these and other risk factors occur, we will not attain significant revenues or gross margins from peramivir and our stock price will be adversely affected.

There are risks related to the potential emergency use or sale of peramivir.

To the extent that peramivir is used as a treatment for H1N1 flu (or other strains of flu), there can be no assurance that it will prove to be generally safe, well tolerated and effective. Emergency use of peramivir may create certain liabilities for us. There is no assurance that we or our manufacturers will be able to fully meet the demand for peramivir in the event of additional orders. Further, we may not achieve a favorable price for additional orders of peramivir in the U.S. or in any other country. Our competitors may develop products that could compete with or replace peramivir. We may face competition in markets where we have no existing intellectual property protection or are unable to successfully enforce our intellectual property rights.

There is no assurance that the non-U.S. partnerships that we have entered into for peramivir will result in any order for peramivir in those countries. There is no assurance that peramivir will be approved for emergency use or will achieve market approval in additional countries. In the event that any emergency use is granted, there is no assurance that any order by any non-U.S. partnership will be substantial or will be profitable to us. The sale of peramivir, emergency use or other use of peramivir in any country may create certain liabilities for us.

Because we have limited manufacturing experience, we depend on third-party manufacturers to manufacture our drug product candidates and the materials for our product candidates. If we cannot rely on third-party manufacturers, we will be required to incur significant costs and potential delays in finding new third-party manufacturers.

We have limited manufacturing experience and only a small scale manufacturing facility. We currently rely upon third-party manufacturers to manufacture the materials required for our drug product candidates and most of the preclinical and clinical quantities of our product candidates. We depend on these third-party manufacturers to perform their obligations in a timely manner and in accordance with applicable governmental regulations. Our third-party manufacturers may encounter difficulties with meeting our requirements, including but not limited to problems involving:

inconsistent production yields;

product liability claims;

difficulties in scaling production to commercial and validation sizes;

interruption of the delivery of materials required for the manufacturing process;

scheduling of plant time with other vendors or unexpected equipment failure;

potential catastrophes, such as the recent earthquake in Japan, that could strike their facilities or have an effect on infrastructure;

potential impurities in our drug substance or drug products that could affect availability of product for our clinical trials or future commercialization;

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

poor quality control and assurance or inadequate process controls; and

lack of compliance with regulations and specifications set forth by the FDA or other foreign regulatory agencies.

A-11

Table of Contents

These contract manufacturers may not be able to manufacture the materials required or our drug product candidates at a cost or in quantities necessary to make them commercially viable. We also have no control over whether third-party manufacturers breach their agreements with us or whether they may terminate or decline to renew agreements with us. To date, our third-party manufacturers have met our manufacturing requirements, but they may not continue to do so. Furthermore, changes in the manufacturing process or procedure, including a change in the location where the drug is manufactured or a change of a third-party manufacturer, may require prior review and approval in accordance with the FDA's cGMPs and comparable foreign requirements. This review may be costly and time-consuming and could delay or prevent the launch of a product. The FDA or similar foreign regulatory agencies at any time may also implement new standards, or change their interpretation and enforcement of existing standards for manufacture, packaging or testing of products. If we or our contract manufacturers are unable to comply, we or they may be subject to regulatory action, civil actions or penalties.

If we are unable to enter into agreements with additional manufacturers on commercially reasonable terms, or if there is poor manufacturing performance on the part of our third-party manufacturers, we may not be able to complete development of, or market, our product candidates.

Our raw materials, drug substances, and drug products are manufactured by a limited group of suppliers and some at a single facility. If any of these suppliers were unable to produce these items, this could significantly impact our supply of drugs for further preclinical testing and clinical trials.

Royalties and milestone payments from Shionogi under the Company's license agreement with Shionogi (the "Shionogi Agreement") will be required to be used by JPR Royalty Sub LLC ("Royalty Sub") to service its obligations under its Pharma Senior Secured 14.0% Notes due 2020 (the "Pharma Notes"), and generally will not be available to us for other purposes until Royalty Sub has repaid in full its obligations under the Pharma Notes.

In March 2011, our wholly-owned subsidiary Royalty Sub issued \$30.0 million in aggregate principal amount of Pharma Notes. The Pharma Notes are secured principally by (i) certain royalty and milestone payments under the Shionogi Agreement, pursuant to which Shionogi licensed from us the rights to market peramivir in Japan and, if approved for commercial sale, Taiwan, (ii) rights to certain payments under a Japanese yen/U.S. dollar foreign currency hedge arrangement put into place by us in connection with the issuance of the Pharma Notes and (iii) the pledge by us of our equity interest in Royalty Sub. Payments from Shionogi to us under the Shionogi Agreement will generally not be available to us for other purposes until Royalty Sub has repaid in full its obligations under the Pharma Notes. Accordingly, these funds will be required to be dedicated to Royalty Sub's debt service and not available to us for product development or other purposes.

If royalties from Shionogi are insufficient for Royalty Sub to make payments under the Pharma Notes or if an event of default occurs under the Pharma Notes, investors may be able to foreclose on the collateral securing the Pharma Notes and our equity interest in Royalty Sub, in which case we may not realize the benefit of future royalty payments that might otherwise accrue to us following repayment of the Pharma Notes.

Royalty Sub's ability to service its payment obligations in respect of the Pharma Notes, and our ability to benefit from our equity interest in Royalty Sub, is subject to numerous risks. Peramivir was first approved for marketing and manufacturing in Japan in October 2009 and has been offered for sale in Japan only since January 2010. As a result, there is very little sales history for peramivir in Japan, and there can be no assurance that peramivir will gain market acceptance in the Japanese market. In addition, Shionogi's sales of peramivir are expected to be highly seasonal and vary significantly from year to year, and the market for products to treat or prevent influenza is highly competitive. Under our license agreement with Shionogi, Shionogi has control over the commercial process for peramivir in Japan and Taiwan. Royalty Sub's ability to service the Pharma Notes may be adversely affected by, among other things, changes in or any termination of our relationship with Shionogi, reimbursement, regulatory, manufacturing and/or intellectual property issues, product recalls, product

Table of Contents

liability claims and allegations of safety issues, as well as other factors. In the event that for any reason Royalty Sub is unable to service its obligations under the PhaRMA Notes or an event of default were to occur under the PhaRMA Notes, the holders of the PhaRMA Notes may be able to foreclose on the collateral securing the PhaRMA Notes and our equity interest in Royalty Sub and exercise other remedies available to them under the indenture in respect of the PhaRMA Notes. In such event, we may not realize the benefit of future royalty payments that might otherwise accrue to us following repayment of the PhaRMA Notes and we might otherwise be adversely affected.

Shionogi's failure to successfully market and commercialize peramivir in Japan would have a material adverse effect on Royalty Sub's ability to service its obligations on the PhaRMA Notes.

The successful commercialization of peramivir in Japan depends on the efforts of Shionogi and is beyond the control of us or Royalty Sub. As discussed above, peramivir has only recently been introduced into the Japanese market, and there can be no assurance that peramivir will gain market acceptance in Japan. Future sales by Shionogi will depend on many factors, including the incidence and severity of seasonal influenza in Japan each year (both of which can vary very significantly from year to year), the perceived and actual efficacy and safety of peramivir, experience of physicians and patients with peramivir, continued market acceptance, continued availability of supply, competition, sales and marketing efforts, governmental regulation and pricing and reimbursement in Japan. Shionogi is responsible for the marketing and sale of peramivir in Japan, including with respect to the pricing of peramivir in that market. There are no minimum royalties, sales levels or other performance measures required of Shionogi under the Shionogi Agreement and Shionogi could in its sole discretion reduce or cease its sale efforts of peramivir in the Japan, subject to its covenant in the Shionogi Agreement to use diligent efforts to commercialize peramivir in Japan. If Shionogi is unable to or fails to successfully market and commercialize peramivir, it would have a material adverse effect on Royalty Sub's ability to service its obligations under the PhaRMA Notes and our ability to benefit from our equity interest in Royalty Sub.

We may be required to pay significant premiums under the foreign currency hedge arrangement entered into by us in connection with the issuance by Royalty Sub of the PhaRMA Notes. In addition, because our potential obligations under the foreign currency hedge are marked to market, we may experience additional quarterly volatility in our earnings attributable to the foreign currency hedge arrangement.

In connection with the issuance by Royalty Sub of the PhaRMA Notes, we entered into a foreign currency hedge arrangement to hedge certain risks associated with changes in the value of the Japanese yen relative to the U.S. dollar. Under the currency hedge arrangement, we may be required to pay a premium in the amount of \$2.0 million in each year beginning in May 2014 and, provided the currency hedge arrangement remains in effect, continuing through May 2020. Such payment will be required if, in May of the relevant year, the spot rate of exchange for Japanese yen-U.S. dollars (determined in accordance with the currency hedge arrangement) is such that the U.S. dollar is worth 100 yen or less. We will be required to mark-to-market our potential obligations under the currency hedge, which may cause us to experience additional quarterly volatility in our earnings as a result. Additionally, we may be required to post cash for mark to market risk, pay significant premiums or a termination fee under the foreign currency hedge agreement entered into by us in connection with the issuance by Royalty Sub of the PhaRMA Notes.

If we or our partners do not obtain and maintain governmental approvals for our products under development, we or our partners will not be able to sell these potential products, which would significantly harm our business because we will receive no revenue.

We or our partners must obtain regulatory approval before marketing or selling our future drug products. If we or our partners are unable to receive regulatory approval and do not market or sell our future drug products, we will never receive any revenue from such product sales. In the United States, we or our partners must obtain

Table of Contents

FDA approval for each drug that we intend to commercialize. The process of preparing for and obtaining FDA approval may be lengthy and expensive, and approval is never certain. Products distributed abroad are also subject to foreign government regulation and export laws of the U.S. Neither the FDA nor foreign regulatory agencies have approved any of our drug product candidates. Because of the risks and uncertainties in biopharmaceutical development, our product candidates could take a significantly longer time to gain regulatory approval than we expect or may never gain approval. If the FDA delays regulatory approval of our product candidates, our management's credibility, our company's value and our operating results may suffer. Even if the FDA or foreign regulatory agencies approve a product candidate, the approval may limit the indicated uses for a product candidate and/or may require post-marketing studies.

The FDA regulates, among other things, the record keeping and storage of data pertaining to potential pharmaceutical products. We currently store most of our preclinical research data, our clinical data and our manufacturing data at our facility. While we do store duplicate copies of most of our clinical data offsite and a significant portion of our data is included in regular backups of our systems, we could lose important data if our facility incurs damage. If we get approval to market our potential products, whether in the United States or internationally, we will continue to be subject to extensive regulatory requirements. These requirements are wide ranging and govern, among other things:

adverse drug experience reporting regulations;

product promotion;

product manufacturing, including good manufacturing practice requirements; and

product changes or modifications.

Our failure to comply with existing or future regulatory requirements, or our loss of, or changes to, previously obtained approvals, could have a material adverse effect on our business because we will not receive product or royalty revenues if we or our partners do not receive approval of our products for marketing.

In June 1995, we notified the FDA that we submitted incorrect data for our Phase II studies of BCX-34 applied to the skin for CTCL and psoriasis. In November 1995, the FDA issued a List of Inspectional Observations, Form FDA 483, which cited our failure to follow good clinical practices. The FDA also inspected us in June 1996. The focus was on the two 1995 Phase 2 dose-ranging studies of topical BCX-34 for the treatment of CTCL and psoriasis. As a result of the investigation, the FDA issued us a Form FDA 483, which cited our failure to follow good clinical practices. We are no longer developing BCX-34; however, as a consequence of these two investigations, our ongoing and future clinical studies may receive increased scrutiny, which may delay the regulatory review process.

We face intense competition, and if we are unable to compete effectively, the demand for our products, if any, may be reduced.

The biotechnology and pharmaceutical industries are highly competitive and subject to rapid and substantial technological change. We face, and will continue to face, competition in the licensing of desirable disease targets, licensing of desirable drug product candidates, and development and marketing of our product candidates from academic institutions, government agencies, research institutions and biotechnology and pharmaceutical companies. Competition may also arise from, among other things:

other drug development technologies;

methods of preventing or reducing the incidence of disease, including vaccines; and

new small molecule or other classes of therapeutic agents.

Developments by others may render our product candidates or technologies obsolete or noncompetitive.

Table of Contents

We and our partners are performing research on or developing products for the treatment of several disorders including T-cell mediated disorders (T-cell cancers and other autoimmune indications), gout, CTCL, CLL, influenza, and hepatitis C. We expect to encounter significant competition for any of the pharmaceutical products we plan to develop. Companies that complete clinical trials, obtain required regulatory approvals and commence commercial sales of their products before their competitors may achieve a significant competitive advantage. Such is the case with Eisai's Targretin for CTCL and the current neuraminidase inhibitors marketed by Glaxo Smith Kline and Roche for influenza. With respect to the neuraminidase inhibitors, these companies may develop i.v. formulations that could compete with peramivir. Further, several pharmaceutical and biotechnology firms, including major pharmaceutical companies and specialized structure-based drug design companies, have announced efforts in the field of structure-based drug design and in the fields of PNP, influenza, hepatitis C, and in other therapeutic areas where we have discovery efforts ongoing. If one or more of our competitors' products or programs are successful, the market for our products may be reduced or eliminated.

Compared to us, many of our competitors and potential competitors have substantially greater:

capital resources;

research and development resources, including personnel and technology;

regulatory experience;

preclinical study and clinical testing experience;

manufacturing and marketing experience; and

production facilities.

Any of these competitive factors could reduce demand for our products.

If we fail to adequately protect or enforce our intellectual property rights or secure rights to patents of others, the value of those rights would diminish.

Our success will depend in part on our ability and the abilities of our partners to obtain, protect and enforce viable intellectual property rights including but not limited to trade name, trade mark and patent protection for our company and its products, methods, processes and other technologies we may license or develop, to preserve our trade secrets, and to operate without infringing the proprietary rights of third parties both domestically and abroad. The patent position of biotechnology and pharmaceutical companies is generally highly uncertain, involves complex legal and factual questions and has recently been the subject of much litigation. Neither the United States Patent and Trademark Office (USPTO), the Patent Cooperation Treaty offices, nor the courts of the United States and other jurisdictions have consistent policies nor predictable rulings regarding the breadth of claims allowed or the degree of protection afforded under many biotechnology and pharmaceutical patents. Further, we do not have worldwide patent protection for our product candidates and our intellectual property rights may not be legally protected or enforceable in all countries throughout the world. The validity, scope, enforceability and commercial value of these rights, therefore, is highly uncertain.

Our success depends in part on avoiding the infringement of other parties' patents and other intellectual property rights as well as avoiding the breach of any licenses relating to our technologies and products. In the U.S., patent applications filed in recent years are confidential for 18 months, while older applications are not published until the patent issues. As a result, avoiding patent infringement may be difficult and we may inadvertently infringe third-party patents or proprietary rights. These third parties could bring claims against us, our partners or our licensors that even if resolved in our favor, could cause us to incur substantial expenses and, if resolved against us, could additionally cause us to pay substantial damages. Further, if a patent infringement suit were brought against us, our partners or our licensors, we or they could be forced to stop or delay research, development, manufacturing or sales of any infringing product in the country or countries covered by the patent we infringe, unless we can obtain a license from the patent holder. Such a license may not be available on acceptable terms, or at all, particularly if

the third party is developing or marketing a product competitive with

A-15

Table of Contents

the infringing product. Even if we, our partners or our licensors were able to obtain a license, the rights may be nonexclusive, which would give our competitors access to the same intellectual property.

If we or our partners are unable or fail to adequately, initiate, protect, defend or enforce our intellectual property rights in any area of commercial interest or in any part of the world where we wish to seek regulatory approval for our products, methods, processes and other technologies, the value of the drug product candidates to produce revenue would diminish. Additionally, if our products, methods, processes, and other technologies or our commercial use of such products, processes, and other technologies, including but not limited to any trade name, trademark or commercial strategy infringe the proprietary rights of other parties, we could incur substantial costs. The USPTO and the patent offices of other jurisdictions have issued to us a number of patents for our various inventions and we have in-licensed several patents from various institutions. We have filed additional patent applications and provisional patent applications with the USPTO. We have filed a number of corresponding foreign patent applications and intend to file additional foreign and U.S. patent applications, as appropriate. We have also filed certain trademark and trade name applications worldwide. We cannot assure you as to:

the degree and range of protection any patents will afford against competitors with similar products;

if and when patents will issue;

if patents do issue we cannot be sure that we will be able to adequately defend such patents and whether or not we will be able to adequately enforce such patents; or

whether or not others will obtain patents claiming aspects similar to those covered by our patent applications.

If the USPTO or other foreign patent office upholds patents issued to others or if the USPTO grants patent applications filed by others, we may have to:

obtain licenses or redesign our products or processes to avoid infringement;

stop using the subject matter claimed in those patents; or

pay damages.

We may initiate, or others may bring against us, litigation or administrative proceedings related to intellectual property rights, including proceedings before the USPTO or other foreign patent office. Any judgment adverse to us in any litigation or other proceeding arising in connection with a patent or patent application could materially and adversely affect our business, financial condition and results of operations. In addition, the costs of any such proceeding may be substantial whether or not we are successful.

Our success is also dependent upon the skills, knowledge and experience, none of which is patentable, of our scientific and technical personnel. To help protect our rights, we require all employees, consultants, advisors and partners to enter into confidentiality agreements that prohibit the disclosure of confidential information to anyone outside of our company and require disclosure and assignment to us of their ideas, developments, discoveries and inventions. These agreements may not provide adequate protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure or the lawful development by others of such information, and if any of our proprietary information is disclosed, our business will suffer because our revenues depend upon our ability to license or commercialize our product candidates and any such events would significantly impair the value of such product candidates.

There is a substantial risk of product liability claims in our business. If we are unable to obtain sufficient insurance, a product liability claim against us could adversely affect our business.

Edgar Filing: BIOCRYST PHARMACEUTICALS INC - Form S-3

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face even greater risks upon any commercialization by us of our product candidates. We have product liability insurance covering our clinical trials in the amount of approximately

A-16

Table of Contents

\$11.0 million. Clinical trial and product liability insurance is becoming increasingly expensive. As a result, we may be unable to obtain sufficient insurance or increase our existing coverage at a reasonable cost to protect us against losses that could have a material adverse effect on our business. An individual may bring a product liability claim against us if one of our products or product candidates causes, or is claimed to have caused, an injury or is found to be unsuitable for consumer use. Any product liability claim brought against us, with or without merit, could result in:

liabilities that substantially exceed our product liability insurance, which we would then be required to pay from other sources, if available;

an increase of our product liability insurance rates or the inability to maintain insurance coverage in the future on acceptable terms, or at all;

withdrawal of clinical trial volunteers or patients;

damage to our reputation and the reputation of our products, resulting in lower sales;

regulatory investigations that could require costly recalls or product modifications;

litigation costs; and

the diversion of management's attention from managing our business.

If our facility incurs damage or power is lost for a significant length of time, our business will suffer.

We currently store numerous clinical and stability samples at our facility that could be damaged if our facility incurred physical damage or in the event of an extended power failure. We have backup power systems in addition to backup generators to maintain power to all critical functions, but any loss of these samples could result in significant delays in our drug development process.

In addition, we currently store most of our preclinical and clinical data at our facility. Duplicate copies of most critical data are stored off-site in a bank vault. Any significant degradation or failure of our computer systems could cause us to inaccurately calculate or lose our data. Loss of data could result in significant delays in our drug development process and any system failure could harm our business and operations.

If we fail to retain our existing key personnel or fail to attract and retain additional key personnel, the development of our drug product candidates and the expansion of our business will be delayed or stopped.

We are highly dependent upon our senior management and scientific team, the unexpected loss of whose services might impede the achievement of our development and commercial objectives. Competition for key personnel with the experience that we require is intense and is expected to continue to increase. Our inability to attract and retain the required number of skilled and experienced management, operational and scientific personnel, will harm our business because we rely upon these personnel for many critical functions of our business.

If, because of our use of hazardous materials, we violate any environmental controls or regulations that apply to such materials, we may incur substantial costs and expenses in our remediation efforts.

Our research and development involves the controlled use of hazardous materials, chemicals and various radioactive compounds. We are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and some waste products. Accidental contamination or injury from these materials could occur. In the event of an accident, we could be liable for any damages that result and any liabilities could exceed our resources. Compliance with environmental laws and regulations could require us to incur substantial

unexpected costs, which would materially and adversely affect our results of operations.

A-17

Table of Contents

INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the information we incorporate by reference, contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, referred to as the Exchange Act, which are subject to the safe harbor created in Section 21E. All statements other than statements of historical facts contained in this prospectus are forward-looking statements. These forward-looking statements can generally be identified by the use of words such as may, will, intends, plans, believes, anticipates, expects, estimates, predicts, potential, the negative of these words or similar expressions. Statements that describe our future plans, strategies, intentions, expectations, objectives, goals or prospects are also forward-looking statements. These forward-looking statements include, but are not limited to, statements about:

the initiation, timing, progress and results of our preclinical testing, clinical trials, and other research and development efforts;

the potential funding from our contract with HHS for the development of peramivir;

the potential for a stockpiling order or profit from any order for peramivir;

the potential use of peramivir as a treatment for H1N1 flu (or other strains of flu);

the further preclinical or clinical development and commercialization of our product candidates, including peramivir, forodesine and other PNP inhibitor and hepatitis C development programs;

the implementation of our business model, strategic plans for our business, product candidates and technology;

our ability to establish and maintain collaborations;

plans, programs, progress and potential success of our collaborations, including Mundipharma for forodesine and Shionogi and Green Cross for peramivir;

the ability of Royalty Sub to service its payment obligations in respect of the PhaRMA Notes, and our ability to benefit from our equity interest in Royalty Sub;

the foreign currency hedge agreement entered into by us in connection with the issuance by Royalty Sub of the PhaRMA Notes;

the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;

our ability to operate our business without infringing the intellectual property rights of others;

estimates of our expenses, future revenues, capital requirements and our needs for additional financing;

the timing or likelihood of regulatory filings and approvals;

our financial performance; and

competitive companies, technologies and our industry.

These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under **Risk Factors** and elsewhere in this prospectus. Any forward-looking statement in this prospectus reflects our current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, results of operations, industry and future growth. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

Table of Contents

Discussions containing these forward-looking statements are also contained in Management's Discussion and Analysis of Financial Condition and Results of Operations incorporated by reference from our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q for the quarters ended since our most recent Annual Report, our Current Reports on Form 8-K, as well as any amendments we make to those filings with the SEC.

A-19

Table of Contents

USE OF PROCEEDS

After giving effect to the sale of our common stock in the maximum aggregate offering amount of \$70.0 million at an assumed offering price of \$3.80 per share, the last reported sale price of our common stock on The NASDAQ Global Select Market on June 27, 2011, we would receive \$70.0 million in gross proceeds, or \$68.3 million in aggregate net proceeds assuming the sales agent fee is paid as described herein. The actual proceeds to us will vary.

We intend to use the net proceeds from this offering for general corporate purposes, which may include funding our research and development efforts, clinical development of BCX-4208 and pre-commercialization activities relating to intravenous peramivir. The amounts and timing of our actual expenditures for each purpose may vary significantly depending upon numerous factors, including the status of our product development efforts, regulatory approvals, competition, marketing and sales activities and the market acceptance of any products we introduce.

A-20

Table of Contents**DILUTION**

If you invest in our common stock, your interest will be diluted to the extent of the difference between the price per share you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value of our common stock as of March 31, 2011 was approximately \$54.2 million, or approximately \$1.20 per share of common stock based upon 45,098,066 shares outstanding. Net tangible book value per share is equal to our total tangible assets, less our total liabilities, divided by the total number of shares outstanding as of March 31, 2011.

After giving effect to the sale of our common stock in the aggregate amount of \$70.0 million at an assumed offering price of \$3.80 per share, the last reported sale price of our common stock on The NASDAQ Global Select Market on June 27, 2011, and after deducting estimated offering commissions payable by us, our net tangible book value as of March 31, 2011 would have been \$122.5 million, or \$1.93 per share of common stock. This represents an immediate increase in net tangible book value of \$0.73 per share to our existing stockholders and an immediate dilution in net tangible book value of \$1.87 per share to new investors in this offering.

The following table illustrates this calculation on a per share basis:

Offering price per share	\$ 3.80
Net tangible book value per share	\$ 1.20
Increase in net tangible book value per share attributable to the offering	\$ 0.73
As-adjusted net tangible book value per share after giving effect to the offering	\$ 1.93
Dilution in net tangible book value per share to new investors	\$ 1.87

In the discussion and table above, we assume no exercise of outstanding options. As of June 24, 2011, there were outstanding options to purchase a total of 7,950,469 shares of common stock at a weighted average exercise price of \$6.32 per share and warrants to purchase 3,159,895 shares of common at an exercise price of \$10.25 per share. To the extent that any of these stock options or warrants are exercised, there may be further dilution to new public investors in this offering.

Table of Contents**PRICE RANGE OF COMMON STOCK AND DIVIDEND POLICY**

Our common stock is listed on The Nasdaq Global Select Market under the symbol BCRX. The following table sets forth, for the periods indicated, the range of high and low sales prices for our common stock, as reported by The Nasdaq Global Select Market.

The reported last sale price of our common stock on The Nasdaq Global Select Market on June 27, 2011 was \$3.80 per share. As of June 24, 2011 there were 229 holders of record of our common stock.

	High	Low
2008		
1 st Quarter	\$ 6.53	\$ 2.81
2 nd Quarter	4.98	2.58
3 rd Quarter	3.60	2.40
4 th Quarter	3.18	0.85
2009		
1 st Quarter	\$ 2.37	\$ 1.15
2 nd Quarter	4.99	1.65
3 rd Quarter	13.47	3.65
4 th Quarter	12.70	5.55
2010		
1 st Quarter	\$ 8.34	\$ 6.21
2 nd Quarter	8.37	5.79
3 rd Quarter	6.24	4.43
4 th Quarter	5.86	4.65
2011		
1 st Quarter	\$ 5.43	\$ 3.27
2 nd Quarter (through June 27, 2011)	4.29	3.17

We have never paid cash dividends and do not anticipate paying cash dividends in the foreseeable future.

Table of Contents

PLAN OF DISTRIBUTION

We have entered into a Sales Agreement, dated June 28, 2011 with McNicoll, Lewis & Vlak LLC (MLV), under which we may sell an aggregate of \$70.0 million in gross proceeds of our common stock from time to time through MLV, as our agent for the offer and sale of the common stock. MLV may sell the common stock by any method permitted by law, including sales deemed to be an at the market offering as defined in Rule 415 of the Securities Act, including without limitation sales made directly on The NASDAQ Global Market, on any other existing trading market for the common stock or to or through a market maker. MLV may also sell the common stock in privately negotiated transactions, subject to our prior approval.

Each time that we wish to issue and sell common stock under the Sales Agreement, we will provide MLV with a placement notice describing the number of shares to be issued, the time period during which sales are requested to be made, any limitation on the number of shares of common stock that may be sold in any one day and any minimum price below which sales may not be made.

Upon receipt of a placement notice from us, and subject to the terms and conditions of the Sales Agreement, MLV has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The settlement between us and MLV of our common stock will occur on the third trading day following the date on which the sale was made. The obligation of MLV under the Sales Agreement to sell our common stock pursuant to a placement notice is subject to a number of conditions. There is no arrangement for funds to be received in escrow, trust or similar arrangement.

We will pay MLV a commission equal to (i) 3.0% of the gross proceeds from the sale of the first \$30.0 million of common stock offered hereby, or (ii) 2.0% of the gross proceeds from the sale of any additional common stock offered hereby. The net proceeds to us that we receive from sales of our common stock will depend on the number of shares actually sold and the offering price for such shares. After giving effect to the sale of our common stock in the maximum aggregate offering amount of \$70.0 million at an assumed offering price of \$3.80 per share, the last reported sale price of our common stock on The NASDAQ Global Select Market on June 27, 2011, we would receive \$70.0 million in gross proceeds, or \$68.3 million in aggregate net proceeds assuming the sales agent fee is paid as described above. The actual proceeds to us will vary. Because there is no minimum offering amount required as a condition to the closing, the actual total may be less than the maximum amount set forth above.

In connection with the sale of our common stock contemplated in this prospectus, MLV will be deemed to be an underwriter within the meaning of the Securities Act of 1933, as amended, and the compensation paid to MLV will be deemed to be underwriting commissions or discounts. We have agreed to indemnify MLV against certain civil liabilities, including liabilities under the Securities Act of 1933.

Sales of our common stock as contemplated in this prospectus will be settled through the facilities of The Depository Trust Company or by such other means as we and MLV may agree upon.

The offering of our common stock pursuant to the Sales Agreement will terminate on the earliest of (1) the sale of all of our common stock subject to the Sales Agreement, or (2) termination of the Sales Agreement by us or MLV. MLV may terminate the Sales Agreement at any time in certain circumstances, including the occurrence of a material adverse change that, in MLV's reasonable judgment, may impair its ability to sell the common stock, our failure to satisfy any condition under the Sales Agreement or a suspension or limitation of trading of our common stock on The NASDAQ Global Select Market. We may terminate the Sales Agreement at any time upon 10 days prior notice, and MLV may terminate the Sales Agreement at any time upon 10 days prior notice.

This is a brief summary of the material provisions of the Sales Agreement and does not purport to be a complete statement of its terms and conditions. A copy of the Sales Agreement is filed as an exhibit to the registration statement of which this prospectus forms a part and is incorporated by reference in this prospectus. See Where You Can Find More Information.

Table of Contents

LEGAL MATTERS

Gibson, Dunn & Crutcher LLP has rendered an opinion with respect to the validity of the common stock being offered by this prospectus. We have filed this opinion as an exhibit to the registration statement of which this prospectus is a part.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2010, and the effectiveness of our internal control over financial reporting as of December 31, 2010, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance on Ernst & Young LLP's reports pertaining to such financial statements (to the extent covered by consents filed with the Securities and Exchange Commission), given on their authority as experts in accounting and auditing.

A-24

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We file electronically with the SEC our annual reports on Form 10-K, quarterly interim reports on Form 10-Q, current reports on Form 8-K, proxy statements and other information. We make available on or through our website, <http://www.biocryst.com>, free of charge, copies of these filings as soon as reasonably practicable after we electronically file them with or furnish them to the SEC. The information on our website is not incorporated by reference into this prospectus. You can also request copies of such documents by contacting our Investor Relations Department at 4505 Emperor Blvd., Suite 200, Durham, North Carolina 27703 or sending an email to info@biocryst.com. You may read and copy any document we file at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You can also obtain copies of this information by mail from the Public Reference Room of the SEC at prescribed rates. You may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330.

The SEC also maintains an Internet world wide web site that contains reports, proxy statements and other information about issuers, like BioCryst, that file electronically with the SEC. The address of that site is <http://www.sec.gov>. Unless specifically listed below under Incorporation of Certain Documents by Reference the information contained on the SEC website is not incorporated by reference into this prospectus.

We have filed with the SEC a registration statement on Form S-3 that registers the securities we are offering. The registration statement, including the attached exhibits and schedules, contains additional relevant information about us and our securities. The rules and regulations of the SEC allow us to omit certain information included in the registration statement from this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information into this prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus, except for any information that is superseded by information that is included directly in this document.

This prospectus includes by reference the documents listed below that we have previously filed with the SEC and that are not included in or delivered with this document. They contain important information about us and our financial condition.

Our Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC on March 15, 2011;

Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2011, filed with the SEC on May 6, 2011;

Our Current Reports on Form 8-K filed with the SEC on January 12, 2011, January 21, 2011, February 10, 2011, February 18, 2011, February 24, 2011 (two filed on this date), May 3, 2011, May 17, 2011, May 25, 2011 and June 27, 2011;

The description of our common stock which is contained in our Registration Statement on Form 8-A (File No. 000-23186) filed with the SEC on January 7, 1994, together with the amendment thereto filed with the SEC on March 14, 1994, including any other amendment or reports filed for the purpose of updating such description; and

The description of our preferred share purchase rights which is contained in our Registration Statement on Form 8-A (File No. 000-23186) filed with the SEC on June 17, 2002, including any amendment or reports filed for the purpose of updating such description.

Table of Contents

All documents filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after the date of the initial registration statement and prior to effectiveness of the registration statement and on or after the date of this prospectus and prior to the termination of our offering of securities shall be deemed to be incorporated by reference herein and to be a part of this prospectus from the date of filing of such documents, excluding any information furnished under Item 2.02 or Item 7.01 of any Current Report on Form 8-K and exhibits filed on such form that are related to such items. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You can obtain any of the documents incorporated by reference in this prospectus from us without charge, excluding any exhibits to those documents unless the exhibit is specifically incorporated by reference as an exhibit to this prospectus. You can obtain documents incorporated by reference in this prospectus at no cost by requesting them in writing or by telephone from us at the following address:

Investor Relations

BioCryst Pharmaceuticals, Inc.

4505 Emperor Blvd., Suite 200

Durham, North Carolina 27703

(919) 859-1302

We have not authorized anyone to give any information or make any representation about us that is different from, or in addition to, that contained in this prospectus or in any of the materials that we have incorporated by reference into this document. Therefore, if anyone does give you information of this sort, you should not rely on it. If you are in a jurisdiction where offers to sell, or solicitations of offers to purchase, the securities offered by this document are unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented in this document does not extend to you.

A-26

Table of Contents

BioCryst Pharmaceuticals, Inc.

\$70,000,000

PROSPECTUS

, 2011

Table of Contents**PART II****INFORMATION NOT REQUIRED IN PROSPECTUS****ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.**

The following table sets forth all expenses payable by the Registrant in connection with the issuance and distribution of the securities, other than underwriting discounts and commissions. The Registrant will bear all of such expenses. All the amounts shown are estimates, except the registration fee.

Registration fee	\$ 8,127
Accounting fees and expenses	50,000
Legal fees and expenses	150,000
Printing and engraving	20,000
Miscellaneous	1,000
 Total	 \$ 229,127

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law (the "DGCL") sets forth the circumstances in which a Delaware corporation is permitted and/or required to indemnify its directors and officers. The DGCL permits a corporation to indemnify its directors and officers in certain proceedings if the director or officer has complied with the standard of conduct set out in the DGCL. The standard of conduct requires that the director or officer must have acted in good faith, in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to matters in a criminal proceeding, the director or officer must have had no reason to believe that his or her conduct was unlawful. With respect to suits by or in the right of the corporation, the DGCL permits indemnification of directors and officers if the person meets the standard of conduct, except that it precludes indemnification of directors and officers who are adjudged liable to the corporation, unless the Court of Chancery or the court in which the corporation's action or suit was brought determines that the director or officer is fairly and reasonably entitled to indemnity for expenses. To the extent that a present or former director or officer of the corporation is successful on the merits or otherwise in his or her defense of a proceeding, the corporation is required to indemnify the director or officer against reasonable expenses incurred in defending himself or herself. The rights provided in Section 145 of the DGCL are not exclusive, and the corporation may also provide for indemnification under bylaw, agreement, vote of stockholders or disinterested directors or otherwise.

The Registrant's Third Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation"), provides for indemnification of any director or officer who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was, or has agreed to become, a director or officer of the Registrant, or is or was serving, or agreed to serve, at the request of the Registrant, as a director, officer or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or on his behalf in connection with such action, suit or proceeding and any appeal therefrom, in each case to the fullest extent permitted by the DGCL. The Registrant shall not indemnify any person seeking indemnification in connection with a proceeding or part thereof initiated by such person unless the initiation was approved by the Board of Directors of the Registrant. The Certificate of Incorporation further provides for permissible indemnification of employees and other agents to the maximum extent permitted by the Delaware General Corporation Law and the Certificate of Incorporation with respect to directors and officers.

Table of Contents

Section 102(b)(7) of the DGCL provides that a corporation may relieve its directors from personal liability to the corporation or its stockholders for monetary damages for any breach of their fiduciary duty as directors except for (i) a breach of the duty of loyalty; (ii) acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law; (iii) willful or negligent violations of certain provisions in the DGCL imposing certain requirements with respect to stock repurchases, redemptions and dividends; or (iv) for any transactions from which the director derived an improper personal benefit. The Registrant's Certificate of Incorporation 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.

In addition, the Registrant currently maintains liability insurance for its directors and officers insuring them against certain liabilities asserted against them in their capacities as directors or officers or arising out of such status.

The indemnification provisions noted above may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities arising under the Securities Act.

ITEM 16. EXHIBITS.

See the Exhibit Index attached to this registration statement and incorporated herein by reference.

ITEM 17. UNDERTAKINGS.

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:

(a) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(b) To reflect in the prospectus any facts or events arising after the effective date of the 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 the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total 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 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(c) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

Provided, however, that paragraphs (1)(a), (1)(b) and (1)(c) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the 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.

Table of Contents

- (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.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
- (a) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
- (b) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
- (a) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (b) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (c) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (d) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

The undersigned registrant hereby undertakes that, for purposes of determining any 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 the registration statement 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.

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 described in Item 15, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against

Table of Contents

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.

Table of Contents

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Durham, State of North Carolina, on June 28, 2011.

BioCryst Pharmaceuticals, Inc.

By: /s/ Jon P. Stonehouse
Jon P. Stonehouse
President and Chief Executive Officer

POWER OF ATTORNEY

Each of the undersigned officers and directors of BioCryst Pharmaceuticals, Inc. hereby severally constitutes and appoints Jon P. Stonehouse, Robert S. Lowrey and Alane Barnes, and each of them singly, his true and lawful attorneys-in-fact and agent, with full power to them and each of them singly, with full and several power of substitution and resubstitution, to sign for him in his name in the capacities indicated below, any and all amendments (including post-effective amendments or any abbreviated Registration Statement, and any amendments thereto, filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission; granting unto said attorneys-in-fact and agents, and each of them, full power and authority to perform any other act on behalf of the undersigned required to be done in the premises, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them or their substitutes or resubstitutes, lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities indicated on June 28, 2011.

Name	Title
/s/ Jon P. Stonehouse	
Jon P. Stonehouse	President, Chief Executive Officer and Director (Principal Executive Officer)
/s/ Stuart Grant	
Stuart Grant	Senior Vice President and Chief Financial Officer and Treasurer (Principal Financial Officer)
/s/ Robert S. Lowrey	
Robert S. Lowrey	Controller and Principal Accounting Officer
/s/ Stephen R. Biggar	
Stephen R. Biggar, M.D., Ph.D.	Director
/s/ Stanley C. Erck	
Stanley C. Erck	Director
/s/ John L. Higgins	
John L. Higgins	Director

Table of Contents

Name	Title
/s/ Zola P. Horovitz	Director
Zola P. Horovitz, Ph.D.	
/s/ Peder Jensen	Director
Peder Jensen, M.D.	
/s/ Kenneth B. Lee	Director
Kenneth B. Lee, Jr.	
/s/ Charles A. Sanders	Director
Charles A. Sanders, M.D.	

Table of Contents

EXHIBIT INDEX

Exhibit No.	Description
1.1*	Form of Underwriting Agreement.
1.2	At Market Issuance Sales Agreement, dated June 28, 2011, by and between the Company and McNicoll, Lewis & Vlax LLC.
4.1	Third Restated Certificate of Incorporation of the Company. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed December 22, 2006 (File No. 000-23186).
4.2	Certificate of Amendment to the Third Restated Certificate of Incorporation of the Company. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed July 24, 2007 (File No. 000-23186).
4.3	Certificate of Increase of Authorized Number of Shares of Series B Junior Participating Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed November 4, 2008 (File No. 000-23186).
4.4	Amended and Restated Bylaws of the Company effective October 29, 2008. Incorporated by reference to Exhibit 3.2 to the Company's Form 8-K filed November 4, 2008 (File No. 000-23186).
4.5	Rights Agreement, dated as of June 17, 2002, by and between the Company and American Stock Transfer & Trust Company, as Rights Agent, which includes the Certificate of Designation for the Series B Junior Participating Preferred Stock as Exhibit A and the form of Rights Certificate as Exhibit B. Incorporated by reference to Exhibit 4 to the Company's Form 8-K filed June 17, 2002 (File No. 000-23186).
4.6	Amendment to Rights Agreement, dated as of August 5, 2007. Incorporated by reference to Exhibit 4.2 to the Company's Form 10-Q filed August 9, 2007 (File No. 000-23186).
4.7	Specimen Certificate for Registrant's Common Stock. Incorporated by reference to Exhibit 4.7 to the Company's Form S-3 filed November 28, 2008 (File No. 333-155783).
4.8*	Certificate of Designation of Preferred Stock.
4.9*	Form of Warrant Agreement (including form of Warrant).
4.10*	Form of Deposit Agreement with respect to Depositary Shares (including form of Depositary Receipt).
4.11*	Form of Stock Purchase Contract (including form of Stock Purchase Certificate).
4.12*	Form of Unit Agreement (including form of Unit Certificate).
5.1	Opinion of Gibson, Dunn & Crutcher LLP.
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Gibson, Dunn & Crutcher LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on the signature page of this Registration Statement).

* To be filed by amendment hereto or pursuant to a Current Report on Form 8-K to be incorporated herein by reference.