[LETTERHEAD OF HOLME ROBERTS & OWEN LLP]

December 15, 2006

Via EDGAR and Overnight Courier

Mr. Jim B. Rosenberg
Senior Assistant Chief Accountant
Division of Corporation Finance
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D. C. 20549-6010

Re: **BioCryst Pharmaceuticals, Inc.**
Form 10-K for the Fiscal Year Ended December 31, 2005
Filed March 9, 2006
File No. 000-23186

Dear Mr. Rosenberg:

On behalf of BioCryst Pharmaceuticals, Inc. (the "Company"), please find the responses and the supplemental information requested by the Staff of the Securities and Exchange Commission (the "Staff") in its letter dated November 15, 2006 to Charles E. Bugg, Ph.D., Chairman and Chief Executive Officer of the Company, which the Company received on December 4, 2006 (the "Comment Letter"), with respect to the above-referenced Annual Report on Form 10-K of the Company. The responses and supplemental information provided herein in response to the Comment Letter are based upon conferences with representatives of the Company and other information supplied by its advisors. We have not independently verified the accuracy and completeness of such information.

The full text of the comment contained in the Comment Letter has been reproduced below, followed by the Company's response.

Form 10-K for the Fiscal Year Ended December 31, 2005

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 34

Overview, Page 34

1. *We note your detailed discussion of the status of each of your significant project in the business section. To further supplement the usefulness of that information, please provide to us in disclosure type format the following information for each of your major research and development projects identified:*

   a) *The costs incurred during each period presented and to date on the project;*

   b) *The nature, timing and estimated costs of the efforts necessary to complete the project;*

   c) *The anticipated completion dates;*

   d) *The risks and uncertainties associated with completing development on schedule, and the consequences to operations, financial position and liquidity if the project is not completed timely; and finally*

   e) *The period in which material net cash inflows from significant projects are expected to commence.*

   To the extent that information requested above is not known or estimable, disclose that fact and the reason why it is not known.

As requested, the Company hereby supplementally provides the Staff with the information in disclosure type format enclosed herewith as Exhibit A, which details the costs incurred during each of the years ended December 31, 2005, 2004 and 2003 for each major product development program identified in the Business section of the Form 10-K. The enclosed disclosure also sets forth the risks and uncertainties associated with completing development of each program. However, determination of the costs incurred to date are not disclosed, due to the fact that the information is not readily available.

To disclose such information would require substantial assumptions without adequate basis. Further, based on the Company's current development status of these projects, we would not expect the presentation of historical costs to be important to investors.

The Company hereby advises the Staff that at this time it cannot predict the anticipated completion date of or the period in which material net cash inflows are expected to commence from each project. As described in the enclosed disclosure, completion dates and material net cash inflows from the Company's research and development programs are subject to a number of risks and uncertainties, including the availability of capital, the development progress of existing or potential future partnerships for its drug candidates, the progress and results of the Company's current and proposed clinical trials for its drug candidates and the allocation of resources among programs.

Other

In connection with responding to the Staff's comments, and as requested in the Comment Letter, enclosed with the letter is a statement from the Company acknowledging that:

- the Company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the Company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

If you would like to discuss the responses above or any other matter, please contact the undersigned at (303) 866-0583 or Jennifer D'Alessandro at (303) 866-0635.

Sincerely,

/s/ Richard R. Plumridge

Richard R. Plumridge

cc: Kei Ino
Jim Atkinson
Charles E. Bugg, Ph.D.
Michael A. Darwin

Exhibit A

Supplemental Disclosure on Research and Development Expenses

Research and Development Expenses

Major components of R&D expenses consist of personnel costs, including salaries and benefits, manufacturing costs, clinical, regulatory, and toxicology services performed by contract research organizations (CRO's), materials and supplies, and overhead allocations consisting of various administrative and facilities related costs. We charge these costs to expense when incurred, consistent with Statement of Financial Accounting Standards No. 2, *Accounting for Research and Development Costs*. These costs are a significant component of R&D expenses. Most of our manufacturing and our clinical and preclinical studies are performed by third-party CRO's. We accrue costs for studies performed by CRO's over the service periods specified in the contracts and adjust our estimates, if required, based upon our on-going review of the level of services actually performed. We expense both our internal and external research and development costs as incurred.

Additionally, we have license agreements with third parties, such as AECOM and IRL that require maintenance fees or fees related to sublicense agreements. These fees are generally expensed as incurred unless they are related to revenues that have been deferred in which case the expenses will be deferred and recognized over the related revenue recognition period.

We group our R&D expenses into two major categories: direct external expenses and all other R&D expenses. Direct external expenses consist of costs of outside parties to conduct laboratory studies, to develop manufacturing processes and manufacture the product candidate, to conduct and manage clinical trials and similar costs related to our clinical and preclinical studies. These costs are accumulated and tracked by program. All other R&D expenses consist of costs to compensate personnel, to purchase lab supplies and services, to maintain our facility, equipment and overhead and similar costs of our research and development efforts. These costs apply to work on our clinical and preclinical candidates as well as our discovery research efforts. These costs have not been charged directly to each program historically because the number of product candidates and projects in research and development may vary from period to period and because we utilize internal resources across multiple projects at the same time.

The following table summarizes our R&D expenses for the periods indicated:

	Year Ended December 31,		
	2005	2004	2003
Direct external R&D expenses by program:			
PNP Inhibitor (Fodosine™)	9,256,417	8,031,922	3,223,202
PNP Inhibitor (BCX-4208)	3,563,966	2,815,773	—
Neuraminidase Inhibitor (peramivir)	1,454,738	27,059	160,489
Hepatitis C Polymerase Inhibitor	446,828	205,741	255,581
Tissue Factor/Factor VIIa Inhibitor	25,072	472,633	597,039
Other	21,167	19,451	22,361
All other R&D Expenses	8,874,189	7,295,533	7,263,310
Total R&D Expenses	$23,642,377	$18,868,112	$11,521,982

At this time, due to the risks inherent in the clinical trial process and given the stages of our various product development programs, we are unable to estimate with any certainty the costs we will incur in the continued development of our drug candidates for potential commercialization. While we are currently focused on advancing each of our product development programs, our future R&D expenses will depend on the determinations we make as to the scientific and clinical success of each drug candidate, as well as ongoing assessments as to each drug candidate's commercial potential. As such, we are unable to predict how we will allocate available resources among our product development programs in the future. In addition, we cannot forecast with any degree of certainty the development progress of our existing partnerships for our drug candidates, which drug candidates will be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

The successful development of our drug candidates is uncertain and subject to a number of risks. We cannot be certain that any of our drug candidates will prove to be safe and effective or will meet all of the applicable regulatory requirements needed to receive and maintain marketing approval. Data from preclinical studies and clinical trials are susceptible to varying interpretations that could delay, limit or prevent regulatory clearance. We, the FDA or other regulatory authorities may suspend clinical trials at any time if we or they believe that the subjects participating in such trials are being exposed to unacceptable risks or if such regulatory agencies find deficiencies in the conduct of the trials or other problems with our products under development. Delays or rejections may be encountered based on additional governmental regulation, legislation, administrative action or changes in FDA or other regulatory policy during development or the review process. Other risks associated with our product development programs are described in Risk Factors in Part I, Item 1A of this Annual Report on Form 10-K, as updated from time to time in our subsequent periodic reports and current reports filed with the SEC. Due to these uncertainties, accurate and meaningful estimates of the ultimate cost to bring a product to market, the timing of completion of any of our product development programs and the period in which material net cash inflows from any of our product development programs will commence are unavailable.

[LETTERHEAD OF HOLME ROBERTS & OWEN LLP]

January 19, 2007

Via EDGAR and Overnight Courier

Mr. Jim B. Rosenberg
Senior Assistant Chief Accountant
Division of Corporation Finance
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D. C. 20549-6010

Re: **BioCryst Pharmaceuticals, Inc.**
Form 10-K for the Fiscal Year Ended December 31, 2005
Filed March 9, 2006
File No. 000-23186

Dear Mr. Rosenberg:

On behalf of BioCryst Pharmaceuticals, Inc. (the "Company"), please find the responses and the supplemental information requested orally by the Staff of the Securities and Exchange Commission (the "Staff") in a telephone conversation on January 9, 2007 (the "Jan. 9 Comment"), with respect to the above-referenced Annual Report on Form 10-K of the Company. The responses and supplemental information provided herein in response to the Jan. 9 Comment are based upon conferences with representatives of the Company and other information supplied by its advisors. We have not independently verified the accuracy and completeness of such information.

As requested, the Company has revised the supplemental tabular disclosure previously provided to the Staff in the response letter dated December 15, 2006 (the "Dec. 15 Response Letter"), to quantify the categories of costs incurred under the "All other R&D expenses" category. The revised supplemental tabular disclosure is enclosed herewith as Exhibit B. The Company undertakes to include disclosure of the type enclosed with the Dec. 15 Response Letter as Exhibit A, as modified in accordance with

Exhibit B enclosed herewith, in its Management's Discussion and Analysis for future reporting periods, commencing with the Company's Annual Report on Form 10-K for the year ended December 31, 2006.

If you would like to discuss the responses above or any other matter, please contact the undersigned at (303) 866-0583 or Jennifer D'Alessandro at (303) 866-0635.

Sincerely,

/s/ Richard R. Plumridge

Richard R. Plumridge

cc: Kei Ino
Jim Atkinson
Jon P. Stonehouse
Michael A. Darwin

Exhibit B

Supplemental Disclosure on Research and Development Expenses

	Year Ended December 31,		
	2005	2004	2003
Direct external R&D expenses by program:			
PNP Inhibitor (Fodosine™)	$ 9,256,417	$ 8,031,922	$ 3,223,202
PNP Inhibitor (BCX-4208)	3,563,966	2,815,773	—
Neuraminidase Inhibitor (peramivir)	1,454,738	27,059	160,489
Hepatitis C Polymerase Inhibitor	446,828	205,741	255,581
Tissue Factor/Factor VIIa Inhibitor	25,072	472,633	597,039
Other	21,167	19,451	22,361
All other R&D expenses:			
Compensation and fringe benefits	3,813,281	3,115,231	2,792,416
Supplies and services	572,056	88,515	695,449
Maintenance, depreciation, and amortization	984,680	1,227,117	1,434,000
Overhead allocation and other	3,504,172	2,864,670	2,341,445
Total R&D Expenses	$23,642,377	$18,868,112	$11,521,982