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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.

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Please note that confidential treatment of the enclosed Exhibit B is requested under the Freedom of Information Act ("FOIA"). Accordingly, we have marked the enclosed Exhibit B with the legend "FOIA Confidential Treatment Requested."

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