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

DIVISION OF
CORPORATION FINANCE

July 12, 2010

Mr. Mark A. Sirgo
President and Chief Executive Officer
BioDelivery Sciences International, Inc.
801 Corporate Center Drive, Suite #210
Raleigh, NC 27607

Re: BioDelivery Sciences International, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2009
File No. 001-31361

Dear Mr. Sirgo:

We have reviewed your filing and have the following comments. In our comments, we ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information or by advising us when you will provide the requested response. Where a comment requests you to revise disclosure, the information you provide should show us what the revised disclosure will look like and identify the annual or quarterly filing, as applicable, in which you intend to first include it. If you do not believe a comment applies to your facts and circumstances, please tell us why in your response. Please furnish us a letter on EDGAR under the form type label CORRESP that keys your responses to our comments.

After reviewing the information provided, we may have additional comments and/or request that you amend your filing.

Item 1. Description of Business

General

1. Please revise your descriptions of the following agreements on pages 12 through 15 and 82 to disclose the duration and termination provisions:

    - North American Licensing Agreement with Meda;
    - European Licensing Agreement with Meda;
    - Supply Agreement with Aveva Drug Delivery Systems;
    - Process Development Agreement with LTS Lohmann Therapie-Systeme AG;
    - Research Collaboration and License Agreement with the Drugs for Neglected Diseases initiative;
    - License Agreement with Atrix Laboratories (now QLT); and
    - Amphotericin B License Agreement with Accentia.

Relationship with CDC IV, LLC, page 15

2. We note your description on page 15 of the Clinical Development and License Agreement with CDC, pursuant to which CDC is entitled to receive a royalty based on net sales of ONSOLIS, including minimum royalties. Please revise your description of this agreement to disclose the following information:

    - The range of royalty rates (for example, "low-single-digits," "high-single-digits," etc.);
    - The minimum amount of royalties payable to CDC; and
    - Duration and termination provisions.

Historical Relationship with UMDNJ and Albany College, page 28

3. We note your description of the license agreement between the company and UMDNJ and Albany College regarding the cochleate technology. You disclose on page 29 that the license agreement obligates you to pay a royalty fee on net sales of cochleate products. Please revise your description of this agreement to disclose the following information:

    - The range of royalty rates (for example, "low-single-digits," "high-single-digits," etc.); and
    - Duration and termination provisions.

Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations

Critical Accounting Policies and Estimates

Revenue Recognition

Meda License, Development and Supply Agreements, page 52

4. Please explain to us your basis for concluding that it was appropriate to recognize the $30 million payment in October 2009, when it appears that you had a continuing obligation to participate in joint committees with Meda and provide other services over the term of the license agreement. Tell us the assets, rights and obligations transferred to Meda in return for the $30 million payment in 2007.

5. You disclose on page 55 that the remaining deliverables will be accounted for as three separate units of accounting after delivery of the license in October 2009. Explain to us how you determined the amount of the aggregate milestone and research and development services payments, totaling approximately $73million that were allocated to

delivered items and items not yet delivered. Tell us how your participation in committees was considered in this allocation. In addition, disclose the composition of the items included in the deferred revenue balance, totaling $13,358,611 at December 31, 2009, and the factors that will determine your recognition of this deferred revenue.

Royalties, Other, page 56

6. Please revise your disclosure to describe the nature of the reductions to ONSOLIS sales revenue in arriving at the net amount used to determine royalties earned by you.

Cost of Royalty Revenues—Other, page 56

7. Please disclose the contractual terms governing the arrangements between Aveva, Meda and you, related to the production and sale of ONSOLIS, including who takes title to the completed product produced by Aveva. If you take title, disclose your accounting treatment for the sale of ONSOLIS. Further, disclose the nature of "all costs related to creating the products at your contract manufacturer," "stability costs" and "certain overhead costs as outlined in the supply agreement." In addition, tell us the nature of costs incurred for the production of ONSOLIS, for which you are not obligated under these contractual arrangements and therefore are not reflected in your financial statements.

Item 11. Executive Compensation

Narrative Disclosure to Summary Compensation Table

Employment Agreements, page 73

8. Please tell us why you believe Mr. Vasisht is not an executive officer and his executive compensation information does not appear in your Summary Compensation Table, as well as the other tables appearing on pages 76 through 80. If you conclude Mr. Vasisht was a named executive officer in 2009 you will need to revise your disclosure to provide executive compensation information for the 2008 and 2009 fiscal years and disclosure for Items 10, 11, 12, and 13.

9. We note your description of Mr. Vasisht's employment agreement on page 75. We further note that you have not included Mr. Vasisht's employment agreement as an exhibit to your Form 10-K. Please file the employment agreement as an exhibit, or provide us with a legal analysis as to why the agreement need not be filed pursuant to Item 601(b)(10)(iii)(A) of Regulation S-K.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are

in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written 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.

Please contact Frank Wyman, Staff Accountant, at (202) 551-3660 or Don Abbott, Senior Staff Accountant, at (202) 551-3608, if you have any questions regarding the processing of your response, as well as any questions regarding comments on the financial statements and related matters. You may contact Rose Zukin, Staff Attorney, at (202) 551-3239 with questions on any of the other comments. In this regard, do not hesitate to contact me at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief Accountant