



DIVISION OF  
CORPORATION FINANCE

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

September 28, 2010

John Gandolfo  
Chief Financial Officer  
Bacterin International Holdings, Inc.  
600 Cruiser Lane  
Belgrade, MT 59714

**Re: Bacterin International Holdings, Inc.  
Item 4.01 Form 8-K  
Filed September 24, 2010  
File No. 333-158426**

Dear Mr. Gandolfo:

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

Please respond to this letter within five business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Item 4.01 Form 8-K Filed September 24, 2010

1. Please revise paragraph (a)(ii) to disclose whether Uniack's reports on the financial statements for either of the years ended December 31, 2008 and 2009 contained an adverse opinion or a disclaimer of opinion or were qualified or modified as to uncertainty, audit scope, or accounting principles and describe the nature of each such adverse opinion, disclaimer of opinion, modification, or qualification. Refer to paragraph (a)(1)(ii) of Item 304 of Regulation S-K. In this regard, we note that Uniack's report on your financial statements for the year ended December 31, 2008 contained an explanatory paragraph regarding your ability to continue as a going concern.
2. Please file an updated letter from Uniack as an exhibit to the amendment filed in response to our comments in accordance with Items 304(a)(3) and 601(b)(16) of Regulation S-K.

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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.

You may contact Lisa Sellars at 202-551-3348 if you have questions. In her absence you may contact me at (202) 551-3344.

Sincerely,

William H. Thompson  
Accounting Branch Chief