



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

July 16, 2010

VIA U.S. Mail and Facsimile

Mr. Larry Bullock
Chief Financial Officer
BioMimetic Therapeutics, Inc.
389 Nichol Mill Lane
Franklin, TN 37067

Re: BioMimetic Therapeutics, Inc.
Form 10-K for the fiscal year ended December 31, 2009
Filed March 12, 2010
Form 10-Q for the quarterly period ended March 31, 2010
File No. 000-51934

Dear Mr. Bullock:

We have reviewed your filings and response letter dated July 2, 2010 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 ten business days by amending your filings, 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 filings and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the fiscal year ended December 31, 2009

Purchase and Supply Obligations, page 24

1. We note your response to prior comment 1. Please file as exhibits the amended agreements with Kensey Nash. If you intend to submit a request for confidential treatment, then see Rule 24b-2.

Item 9A. Controls and Procedures, page 79

Management's Report on Internal Control Over Financial Reporting, page 79

2. We note your proposed disclosure regarding your officers' conclusions about the effectiveness of the Company's internal control over financial reporting. While you are not required to include the definition of internal control over financial reporting in your conclusion, when you do, all of the language that appears following the word "effective" in your conclusion must be consistent with and not modify the language that appears in the definition of "internal control over financial reporting" set forth in Rule 13a-15(f) of the Exchange Act. Alternatively, you may remove that definition.

Consolidated Financial Statements

Consolidated Statements of Operations, page F-4

3. We acknowledge your response to prior comments 13, 14 and 15 related to royalty and sublicense revenue and expense. We understand from your response that royalty and sublicense revenue and expenses are not related. With a view toward transparency, in future filings please verify that your descriptions of royalty and sublicense revenue and expense throughout your Form 10-K, such as on pages 25, 28, 70 and 72, clarify the separate nature of the independent transactions and are consistent with your description in the notes to the financial statements.

Representations

4. We note that your acknowledgements were included in a letter signed by your counsel. Please provide a letter from management with the three acknowledgements in the form previously requested.

Larry Bullock
BioMimetic Therapeutics, Inc.
July 16, 2010
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You may contact Leigh Ann Schultz at 202-551-3628 or Kate Tillan, Assistant Chief Accountant, at 202-551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Thomas Jones at 202-551-3602 or Daniel Morris at 202-551-3314 with any other questions. You may also contact me at (202) 551-3671.

Sincerely,

Martin James
Senior Assistant Chief Accountant

cc: Ms. Anna T. Pinedo, Morrison & Foerster LLP