



DIVISION OF
CORPORATION FINANCE

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

June 29, 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 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

Item 1. Business, page 1

Purchase and Supply Obligations, page 24

1. Please tell us where you filed as exhibits the amended agreements with Kensey Nash mentioned in the first three paragraphs on page 25 and the agreement with Cam Bioceramics BV mentioned in the fourth paragraph on page 25.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation, page 59

Overview, page 59

2. When drafting future "Overview" sections for your Management's Discussion and Analysis of Financial Condition and Results of Operations, please carefully review the guidance in Release 34-48960 (December 19, 2003). As noted in that release, an overview should include the most important matters on which a company's executives focus in evaluating financial condition and operating performance and provide a context for the discussion and analysis of the financial statements. A good overview should:
 - be a balanced, executive-level discussion that identifies the most important themes or other significant matters with which management is concerned primarily in evaluating the company's financial condition and operating results;
 - include economic or industry-wide factors relevant to the company;
 - provide insight into the material opportunities, challenges and risks on which the company's executives are most focused and the actions the company's executives are taking to address those opportunities, challenges and risks; and
 - address other issues mentioned in the Release.

For example, we note your March 12, 2010 earnings conference call about net losses for the year.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures, page 79

3. We note your statements with respect to reasonable assurance. Please revise future filings to state clearly, if true, that your disclosure controls and procedures are *designed to* provide reasonable assurance of achieving their objectives and that your principal executive officer and principal financial officer concluded that your disclosure controls and procedures are effective at that reasonable assurance level. In the alternative, remove the reference to the level of assurance of your disclosure controls and procedures. Please refer to Section II.F.4 of Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, SEC Release No. 33-8238, available on our website at <<http://www.sec.gov/rules/final/33-8238.htm>>.

Changes in Internal Control over Financial Reporting, page 79

4. We note your disclosure that there were no significant changes in your internal control over financial reporting during the period covered by the Form 10-K. To the extent that your disclosure was provided to address Item 308(c) of Regulation S-K, in future filings your disclosure should address any change that occurred during the last quarter (your fourth fiscal quarter in the case of an annual report) that materially affected, or is reasonably likely to materially affect, your internal control over financial reporting. Please correct the disclosure in future filings.

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

5. We note that you included your conclusion on the effectiveness of your disclosure controls and procedures under the heading for your report on internal control over financial reporting and not your evaluation of disclosure controls and procedures. We also note that you combined your conclusion on the effectiveness of disclosure controls and procedures with your conclusion on the effectiveness of internal control over financial reporting. We note that you similarly combined your conclusions in your March 31, 2010 Form 10-Q. Please amend your Form 10-K and Form 10-Q to include a separate conclusion of your management on the effectiveness of disclosure controls and procedures under the appropriate heading. Refer to Item 307 of Regulation S-K.
6. In addition, we note your statement that you evaluated the effectiveness of your *disclosure controls and procedures* using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in Internal Control — Integrated Framework. It is not clear why this disclosure refers to the evaluation of your disclosure controls and procedures. Please amend your Form

10-K to disclose the framework used by management to evaluate the effectiveness of your *internal control over financial reporting* consistent with Item 308(a)(2) of Regulation S-K.

Item 10. Directors, Executive Officers and Corporate Governance, page 82

7. In connection with our review of your Part III information, we note the biographical information of each director in the last sentence of the last two paragraphs beginning on page 5 through 7 of your proxy statement under “Election of Directors.” In future filings, be more specific in describing the specific experience, qualifications, attributes or skills that led the board to conclude that such person should serve as a director. See Item 401(e) of Regulation S-K.
8. In connection with our review of your Part III information, we note the reference to “diversity” in the second paragraph on page 12 of your proxy statement. In future filings, please describe how this policy of diversity is implemented.

Item 11. Executive Compensation, page 82

9. In connection with our review of your Part III information, we note the reference to “benchmark review” in the second paragraph under the section “Executive Compensation Philosophy” on page 14 of your proxy statement and the reference on page 15 to the “compensation committee considered the average compensation.” In future filings, please specifically identify the elements of compensation that are benchmarked and how such benchmarks are determined. For example, please disclose whether you compared yourself to the 50th percentile, a range of benchmarks or otherwise. See Item 402(b)(2)(xiv) of Regulation S-K.
10. In our review of your Part III information, we note that you have not disclosed the 2009 and 2010 “goals” mentioned in the penultimate paragraph under the section “Annual Discretionary Cash Bonus” beginning on page 16 of your proxy statement. In future filings, provide more specific disclosure of the nature of the goals without disclosing information that is appropriate for confidential treatment. To the extent you believe disclosure of such information, on a historical basis, would result in competitive harm such that the information could be excluded under Instruction 4 to Item 402(b) of Regulation S-K, provide us with a detailed explanation supporting your conclusion. Refer to Question 118.04 of the Regulation S-K Compliance and Disclosure Interpretations available on our website at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>. To the extent that it is appropriate to omit specific goals, you are required to provide appropriate disclosure pursuant to Instruction 4 to Item 402(b) of Regulation S-K. In discussing how difficult or likely it will be to achieve the goals and increased

shareholder value, you should provide as much detail as necessary without disclosing information that poses a reasonable risk of competitive harm.

11. In connection with our review of your Part III information, we note from your disclosure under the section “Long-Term Incentives” beginning on page 17 of your proxy statement that you granted restricted shares to your named executive officers. In future filings, please include analysis and insight into how your compensation committee made its compensation determination with respect to each named executive officer. For example, discuss and analyze how the compensation committee determined the actual number of restricted shares that were awarded to your named executive officers and, if applicable, why those awards varied among your named executive officers. For example, we note the references in the last full paragraph on page 18 about “individual performance” and “goals.”

Item 13. Certain Relationships and Related Transactions, page 82

12. In connection with our review of your Part III information, we note the disclosure on pages 35 and 36 of your consulting agreements with Dr. Friedlander. Please tell us where you filed as exhibits the consulting agreements

Consolidated Financial Statements

Consolidated Statements of Operations, page F-4

13. We see that you record royalty and sublicense fee revenues. Tell us whether you incur any costs specifically attributable to this revenue and, if so, where the amounts are classified.
14. In a related matter, we see on pages 70 and 72 you attribute a portion of your general and administrative expense to royalty expense related to *GEM21S* sold by Luitpold. Please tell us if this royalty expense is a cost of the royalty revenue you recognized. Further, please tell us the accounting literature you considered in determining your financial statement presentation for royalty expense.
15. Further, if the royalty revenue and expense referred to above are related, please tell us how you considered whether to account for the *GEM21S* royalty revenue gross or net. Refer to FASB ASC 605-45-45.

2. Summary of Significant Accounting Policies, page F-10

16. We see that you are utilizing a distributor for sales in Canada. Please tell us about the principal provisions of sales to your distributor. In that regard, please tell us about any price protection arrangements, rights of return or exchange, or other post-shipment obligations and the impact of these matters on the timing of revenue recognition.

Form 10-Q for the Quarterly Period Ended March 31, 2010

Item 4. Controls and Procedures, page 20

17. We note your disclosure that concluded that your disclosure controls and procedures *and your internal control over financial reporting* were effective as of the end of the period covered by this report. These conclusions are included under a section labeled *Management's Evaluation on Internal Control over Financial Reporting*. However, in the following paragraph you disclose that the Form 10-Q does not include a report of management's assessment regarding your internal controls over financial reporting. Please note that while Rule 13a-15(b) requires you to evaluate the effectiveness of your *disclosure controls and procedures* as of the end of each fiscal quarter, Rule 13a-15(c) requires you to evaluate the effectiveness of your internal control over financial reporting *as of the end of each fiscal year* and, therefore, the disclosures made pursuant to Item 308 of Regulation S-K would only be required in your annual reports on Form 10-K. Tell us whether you performed an assessment of your internal controls as of March 31, 2010.
- If you did, file an amended 10-Q to revise the section to provide all the disclosures required by Item 308 of Regulation S-K and to provide a separate conclusion on the effectiveness of your disclosure controls and procedures outside of the section labeled Management's Evaluation on Internal Control over Financial Reporting.
 - Otherwise, please file an amended 10-Q to remove all references to your management's assessment of your internal control over financial reporting and its conclusion on the effectiveness of your internal control over financial reporting on that date.

Mr. Larry Bullock
BioMimetic Therapeutics, Inc.
June 29, 2010
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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 Leigh Ann Schultz at 202-551-3628 or me 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.

Sincerely,

Kate Tillan
Assistant Chief Accountant