

Mail Stop 4720

January 25, 2010

Michael Cohen  
President, Chief Executive Officer and Chairman of the Board  
Proteonomix, Inc.  
187 Mill Lane  
Mountainside, New Jersey 07052

**Re: Proteonomix, Inc.  
Registration Statement on Form 10-12G/A  
Filed January 19, 2010  
File No. 000-53750**

Dear Mr. Cohen:

We have reviewed your January 19, 2010 response to our December 17, 2009 comment letter and have the following additional comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

**Form 10-12G/A filed January 19, 2010**

**General**

1. We note your response to our prior comment 1 and advise you that none of the listed statements have been eliminated from the filing, as you indicate in your response letter. Please delete each of the following statements from the filing:
  - “Further, our protein molecules form a complex structure that enhances skin firmness and elasticity and delivers essential complexes that assist in the support of cells found in human tissues. We have found that Matrix NC138,

when combined with our carrier agents and applied to the skin surface, penetrates the outer epidermal layer. Once within the extracellular matrix environment of the skin, the components enhance the production of type 4 collagen in the skin, helping to reduce the appearance of superficial wrinkles.” (Page 9)

- “We and our subsidiary, Proteoderm, conducted tests of the efficacy of our cosmeceutical kit on a dozen women and have found that our kit removed age lines in the faces and under the eyes of each person we tested.” (Page 9)
- “The results were that the Matrix NC-138 induced collagen production by more than 300% in aged fibroblasts.” (Page 9)
- “In addition, it was demonstrated that Matrix NC-138 rejuvenates skin cells.” (Page 9)
- “Matrix NC-138 extended the longevity of keratinocytes and fibroblasts.” (Page 9)
- “The results were that Matrix NC-138 reduces both deep and subtle wrinkles...It was observed that Matrix NC-138 led to a refinement of the skin texture and contributed to a youthful look. Additionally, Matrix NC-138 increased moisture content of the skin. The moisture content was clearly improved compared to placebo control after four weeks of application.” (Page 9).

2. We note your response to our prior comment 4. Please further revise the newly added disclosure on page 13 to indicate, as you have in your response letter, that you cannot guarantee the stated results, in addition to stating that further testing is needed to confirm management’s belief that stem cells grown on the ES-400 Platform will achieve the same positive results as stem cells grown on other platforms.

Item 1. Business, page 3

3. We note that you have deleted disclosure on page 9 regarding the services the PCPC provides to its members. As we believe this information is important to an investor’s understanding of the PCPC and its role in the industry, we ask that you consider reinstating this disclosure to the filing.
4. We note your response to our prior comment 7 and advise you that Appendix A has not been added to Exhibit 10.27 in the current filing as indicated. Please file Appendix A to Exhibit 10.27 with your next amendment.
5. We note your response to our prior comment 9 and advise you that the paragraph included in your response letter discussing the research agreement with the University of Miami dated January 31, 2008 has not been included in the filing. Please revise your disclosure to include this paragraph. Also, this agreement does not appear to be filed. Please file this agreement as an exhibit to the registration

statement. Finally, Exhibit 10.47, the license agreement with Ian McNiece dated October 29, 2007, does not include Appendix A or Exhibit A, both of which are referred to in the agreement. Please refile Exhibit 10.47 with Appendix A and Exhibit A included.

6. We note your response to our prior comment 13 and advise you that page 9 of the filing still refers to the PCPC as a “self regulatory” organization. In conformity with your prior response, please delete this reference.
7. We note your response to our prior comment 14 and the newly added disclosure on page 9. The sample disclosure provided in your response letter includes the filing of “timely reports with the FDA regarding manufacturing and ingredient usage” as one of the principles of the PCPC commitment code; however, this principle is not included on page 9 of the current filing. Please include this disclosure in your amended Form 10.
8. We note your response to our prior comment 15 and your statement that the approved list “contains materials which are known by the CIR to be safe.” Please include this description of the approved list in the filing itself.
9. We note your response to our prior comment 17 and your disclosure on pages 8 and 15 that your President, Michael Cohen, loaned the Company funds to manufacture and package the raw materials for ten thousand cosmeceutical kits on a non-interest-bearing basis. Please disclose the date and amount of the loan and provide appropriate disclosure in your document where you discuss related party transactions.

Item 4. Security Ownership of Certain Beneficial Owners and Management, page 22

10. We note your response to our prior comment 29 and that you have deleted footnote (4) entirely from page 23 which previously stated that “Mark Cohen owns 193,868 in his name; and beneficially 68,257 shares through his 49% ownership in Cambridge Financial Group, Inc.” If this statement is still accurate, please reinstate it to the filing.

Item 5. Directors and Executive Officers, page 23

11. Please include Mr. Fidler’s position as General Counsel in the table on page 23. In addition, in his biography on page 24, please disclose the dates when he became a director of the Company and General Counsel.
12. Please also ensure that, in their respective biographies, you provide the dates when Mr. McNiece became Vice President and Chief Scientific Officer of the Company and the dates when the members of your Scientific Advisory Board become associated with the Company.

Item 6. Executive Compensation, page 27

13. Please update your compensation disclosure for officers and directors to include the compensation paid during the fiscal year ended December 31, 2009 as well as the fiscal years ended December 31, 2008 and 2007.
14. We note your response to our prior comment 31. Please provide disclosure that clarifies which performance period is covered by the December 31, 2009 amendments to Mr. Cohen's employment agreement. We may have further questions based on your response.

Item 9. Market Price of and Dividends on the Registrant's Common Equity and Related Stockholder Matter, page 30

15. We note the following statement on page 31: "The volatility of the price of our stock reflects market conditions versus any significant positive or negative business factor." The statement, as written, is confusing. If you mean your stock price volatility reflects market conditions and the impact of significant business developments, both positive and negative, please revise accordingly. Otherwise, please explain what is meant by your statement.

Exhibits, page 34

16. We note your response to our prior comment 33 and advise you that footnote (1) has not been revised to provide the correct date of filing of the Form 10. Please revise footnote (1) on page 35 to list the initial date of filing of the Form 10 as August 4, 2009 rather than August 10, 2009.

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As appropriate, please amend your filing in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested supplemental information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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 all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert this action as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as a confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

Please contact Laura Crotty at (202) 551-3563, Daniel S. Greenspan, Special Counsel, at (202) 551-3623 or myself at (202) 551-3715 with any questions.

Sincerely,

Jeffrey P. Riedler  
Assistant Director