



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

Mail Stop 3030

September 30, 2009

Via Facsimile and U.S. Mail

Mr. Kevin J. Cousins  
Chief Financial Officer  
SenoRx, Inc.  
3 Morgan  
Irvine, California 92618

**Re: SenoRx, Inc.**  
**Form 10-K for the Year Ended December 31, 2008**  
**Filed March 16, 2009**  
**Form 10-Q for the Quarter Ended June 30, 2009**  
**Filed August 2, 2009**  
**File No. 001-33382**

Dear Mr. Cousins:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your documents in future filings in response to these comments. If you disagree, we will consider your explanation as to why our comments are 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-K for the Year Ended December 31, 2008

Item 3. Legal Proceedings, page 30

1. Please revise your disclosure in future filings, as applicable, to describe the February 18, 2009 ruling issued in connection with the Hologic litigation.

Index to Financial Statements, page 50

Note 5. Income Taxes, page 63

2. We note that you classify interest expense for uncertain income tax positions as part of general and administrative expense within your statement of operations. Please revise your future filings to classify interest expense for your uncertain income tax positions as part of either income tax expense or interest expense within your statement of operations. Alternatively, please explain to us how your accounting policy related to your classification of interest expense for your uncertain income tax positions complies with the guidance in 740-10-45-25 of the FASB Accounting Standard Codification

Item 11. Executive Compensation, page 49

3. We note your disclosure on page 15 of your definitive proxy statement filed on April 30, 2009 that you have historically benchmarked your compensation and sought to target it “at or around the average” of the amounts provided to executives at comparable companies. Given that you target the elements of your compensation packages, please briefly discuss in your applicable future filings how each element of compensation you provide to the named executive officers relates to the data you have analyzed from the peer companies and include an analysis of where actual payments under each element of compensation fell within the targeted range. If any of your named executive officers are compensated at levels that are materially different from the targeted levels of compensation, please also provide discussion and analysis as to why.
4. We note your disclosure on page 15 of your proxy statement that your compensation committee reviews the salaries of executives annually and makes recommendations as to any change in salary levels based on individual performance during the calendar year. In your future filings as applicable, please expand your disclosure to describe for each named executive officer the individual performance efforts that resulted in any base salary increase.
5. We note from your disclosure on pages 15 and 16 of your proxy statement that you have not disclosed the specific targets to be achieved in order for your named executive officers to earn their respective annual cash incentive bonuses or grants of stock options and restricted stock units. Please provide such disclosure in your future filings, as applicable. To the extent you believe that 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, please provide us with a detailed explanation supporting your conclusion. To the extent that it is appropriate to omit specific targets or performance objectives, you are required to provide appropriate disclosure pursuant to Instruction 4 to Item 402(b) of Regulation S-K. Refer also 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](#). In discussing how difficult or likely it will be to achieve the target levels or other factors, you should provide as much detail as necessary without disclosing information that poses a reasonable risk of competitive harm.

Form 10-Q for the Quarter Ended June 30, 2009

Item 2. Management's Discussion and Analysis of Financial Conditions and Results of Operations, page 10

Results of Operations, page 12

6. We note from page 5 that you recognized \$434,598 of provision for inventory obsolescence during the six months ended June 30, 2009. Please tell us and revise your future filings to disclose in more detail the nature of your inventory obsolescence charge(s) including a discussion of how any significant inventory obsolescence charges impacted your earnings.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter that keys your responses to our comment and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your 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.

In connection with responding to our comments, please provide, in writing, a 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.

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 our review of your filing or in response to our comments on your filing.

Mr. Kevin J. Cousins  
SenoRx, Inc.  
September 30, 2009  
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You may contact Tara Harkins at (202) 551-3639 or Kevin L. Vaughn, Accounting Branch Chief, at (202) 551-3643 if you have questions regarding comments on the financial statements and related matters. Please contact Joe McCann at (202) 551-6262 or me at (202) 551-3625 if you have questions on any other comments.

Sincerely,

Mary Beth Breslin  
Senior Attorney