



DIVISION OF  
CORPORATION FINANCE

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

December 31, 2014

Via E-mail

John Poyhonen  
President and Chief Executive Officer  
Senomyx, Inc.  
4767 Nexus Centre Drive  
San Diego, CA 92121

**Re: Senomyx, Inc.  
Form 10-K for Fiscal Year Ended December 31, 2013  
Filed March 13, 2014  
File No. 0-50791**

Dear Mr. Poyhonen:

We have limited our review of your filing to your contacts with countries that have been identified as state sponsors of terrorism, and we have the following comments. Our review with respect to this issue does not preclude further review by the Assistant Director group with respect to other issues. In our comments we ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days 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, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

General

1. You state on page 26 of the 10-K that 55% of your total revenues during 2013 were derived from PepsiCo. In a 2013 letter to the staff, PepsiCo states that it sells or distributes products in Cuba, Sudan and Syria.

Cuba, Sudan and Syria are designated by the Department of State as state sponsors of terrorism, and are subject to U.S. economic sanctions and export controls. Please describe to us the nature and extent of your past, current, and anticipated contacts with Cuba, Sudan and Syria, if any, whether through partners, customers, collaborators or other direct or indirect arrangements. You should describe any services, products, information or technology you have provided to Cuba, Sudan or Syria, directly or indirectly, and any agreements, commercial arrangements, or other contacts you have had with the governments of those countries or entities they control.

2. Please discuss the materiality of any contacts with Cuba, Sudan and Syria you describe in response to the comment above, and whether those contacts constitute a material investment risk for your security holders. You should address materiality in quantitative terms, including the approximate dollar amounts of any associated revenues, assets, and liabilities for the last three fiscal years and the subsequent interim period. Also, address materiality in terms of qualitative factors that a reasonable investor would deem important in making an investment decision, including the potential impact of corporate activities upon a company's reputation and share value. Various state and municipal governments, universities, and other investors have proposed or adopted divestment or similar initiatives regarding investment in companies that do business with U.S.-designated state sponsors of terrorism. You should address the potential impact of the investor sentiment evidenced by such actions directed toward companies that have operations associated with Cuba, Sudan and Syria.

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 the 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.

Please contact Daniel Leslie, Staff Attorney, at (202) 551-3876 or me at (202) 551-3470 if you have any questions about the comments or our review.

Sincerely,

/s/ Cecilia Blye

Cecilia Blye, Chief  
Office of Global Security Risk

cc: Jeffrey Riedler  
Assistant Director  
Division of Corporation Finance

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Charles Bair  
Cooley LLP