



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

February 24, 2012

Via E-Mail

Glenn P. Muir
Director, Executive Vice President and Chief Financial Officer
Hologic, Inc.
35 Crosby Drive
Bedford, MA 01730

Re: Hologic, Inc.
Form 10-K for the Fiscal Year Ended September 24, 2011
Filed November 23, 2011
File No. 0-18281

Dear Mr. Muir:

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. At this juncture, we are asking 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. We note that your website provides contact information for companies in Iran and Syria that offer your products. We note also that a 2010 New York Times article reports that you have received 56 licenses for transactions in or with Iran. Iran and Syria are identified by the State Department as a state sponsor 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 Iran and Syria, whether through subsidiaries, distributors, resellers or other direct or indirect arrangements. Your response should describe any services or products you have provided to Iran and Syria,

and any agreements, commercial arrangements, or other contacts you have had with the governments of those countries or entities controlled by those governments.

2. Please discuss the materiality of your contacts with Iran and Syria described in response to the foregoing comment 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. Your materiality analysis should address the potential impact of the investor sentiment evidenced by such actions directed toward companies that have operations associated with Iran and Syria.
3. We note disclosure on page 17 that some of your technology is governed by the International Traffic in Arms Regulations. Please tell us whether any of the products that you sell in Iran and Syria have dual use or military applications, or are otherwise on the Commerce Control List of the Department of Commerce.

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.

Glenn P. Muir
Hologic, Inc.
February 24, 2012
Page 3

Please contact Jennifer Hardy, Special Counsel, at (202) 551-3767 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: Amanda Ravitz
Assistant Director
Division of Corporation Finance