

August 2, 2013

**By EDGAR Transmission
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U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549-0404

Attention: Mr. Jeffrey P. Riedler
Assistant Director

**RE: Intrexon Corporation
Amendment No. 1 to Registration Statement on Form S-1
Filed July 29, 2013
File No. 333-189853**

Dear Mr. Riedler:

As counsel to Intrexon Corporation (the "Company"), I am transmitting herewith for filing pursuant to the provisions of the Securities Act of 1933, as amended, the Company's responses to the comments of the staff (the "Staff") of the Division of Corporation Finance of the Securities and Exchange Commission contained in its comment letter to Mr. Randal J. Kirk, dated August 1, 2013.

Set forth below is the Company's response to the comment of the Staff. All references below to specific paragraphs and pages are to the paragraphs and pages of the above-referenced Registration Statement.

Summary consolidated financial data, page 8

1. Please explain why the amounts for "Pro forma shares used in the computation of pro forma net loss per share, basis and diluted" differ from the corresponding amounts on pages F-5 and F-64. This comment also applies to your selected consolidated financial data pro forma share amounts on page 54.

The Company acknowledges the Staff's comment. In response to the Staff's comment, and as discussed with Mr. Wyman of your office by telephone on the date of this letter, the Company advises the Staff that, the pro forma share amounts presented on pages 8, 54, F-5 and F-64 are calculated based on the weighted average number of shares outstanding during the reporting period. As indicated in footnote 1 to the tables on pages 8 and 54, the pro forma amounts as of and for the period ended December 31, 2012 give effect to 19,047,619 shares of Series F preferred stock sold between December 31, 2012 and April 30, 2013 and the assumed conversion of those shares into 10,884,353 shares of common stock upon the completion of this offering. Also, as indicated in footnote 2 to the tables on pages 8 and 54, the

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pro forma amounts as of and for the period ended March 31, 2013 give effect to 10,868,655 shares of Series F preferred stock sold on April 30, 2013 and the assumed conversion of those shares into 6,210,660 shares of common stock upon the completion of this offering. The Company's calculations of the pro forma shares on pages 8 and 54 assume that the Series F preferred stock was issued on the last day of the reporting period. For example, the calculation of pro forma shares for the period ended March 31, 2013 included 1/90th of the as-converted 6,210,660 shares issued on April 30, 2013. The Company included these shares in the pro forma calculations because the Company believes that this information would better inform investors of the future potential impact of such shares in the calculation of pro forma earnings per share.

The unaudited pro forma amounts appearing on pages F-5 and F-64 form a part of the Company's unaudited quarterly consolidated financial statements as of and for the period ended March 31, 2013 or the audited annual consolidated financial statements as of and for the period ended December 31, 2012 and accordingly only reflect historical activity through the end of the respective reporting period and do not contemplate the subsequent issuances of Series F preferred stock.

If you have any questions or comments regarding the foregoing, or if there is any additional information that we might provide to assist the Staff's review, please contact the undersigned at (804) 697-1239 or John Owen Gwathmey at (804) 697-1225.

Sincerely,

/s/ David I. Meyers

David I. Meyers

Cc: Mr. Donald Abbott, SEC Staff
Mr. Johnny Gharib, SEC Staff
Mr. John Krug, SEC Staff
Mr. Franklin Wyman, SEC Staff
Mr. Randal J. Kirk, Intrexon Corporation
Mr. Donald P. Lehr, Intrexon Corporation
Mr. John Owen Gwathmey, Troutman Sanders LLP