



DIVISION OF
CORPORATION FINANCE

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

October 12, 2012

Via E-mail

Mr. Mike Tomas
Chief Executive Officer and President
And Principal Financial and Accounting Officer
Bioheart, Inc.
13794 NW 4th Street, Suite 212
Sunrise, Florida 33325

Re: Bioheart, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2011
Filed April 12, 2012
Form 10-Q for the Quarterly Period Ended June 30, 2012
Filed August 14, 2012
File No. 001-33718

Dear Mr. Tomas:

We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. In our comments, we ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within 10 business days by providing us the requested information, amending your filings or by advising us when you will provide the requested response. If you do not believe the comments apply to your facts and circumstances, please tell us why in your response. Please furnish us a letter on EDGAR under the form type label CORRESP that keys your responses to our comments.

After reviewing any amendment to your filings and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended December 31, 2011
Report of Independent Registered Public Accounting Firm, page F-3

1. The audit report of Fiondella, Milone and LaSaracina LLP references the report of other auditors for the financial statements through December 31, 2010. Please amend your filing to include Russell Bedford Stefano Mirchandani's report as reissued by them as required by Rule 2-05 of Regulation S-X.
2. We note that you did not include a copy of Jewett Schwartz Wolfe & Associates' (JSWA) audit report in your latest Form 10-K. However, on September 7, 2012 the PCAOB revoked the registration of Jewett, Schwartz, Wolfe & Associates and a copy can no longer be

included in your Form 10-K on or after the date that JSWA's registration was revoked. Please have your inception through 2009 financial information reaudited by your current auditor or request a waiver by The Division of Corporation Finance, Chief Accountant's Office to file this information on an unaudited basis. Any waiver request should include a detailed analysis supporting your basis for the request.

Form 10-Q for the Quarterly Period ended June 30, 2012
Exhibit 31.1 and 32.1

3. Please amend your filing to include signatures for your 302 and 906 management certifications.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in these filings to be certain that the filings include 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 a 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 filings;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to these filings; 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.

You may contact Dana Hartz, Staff Accountant, at (202) 551-3648 or Joel Parker, Accounting Branch Chief, at (202) 551-3651 if you have questions regarding these comments. In this regard, do not hesitate to contact me at (202) 551-3679.

Sincerely,

/s/ Jim B. Rosenberg

Jim B. Rosenberg
Senior Assistant Chief Accountant