

Via Facsimile and U.S. Mail
Mail Stop 6010

January 22, 2009

Howard J. Leonhardt
Chief Executive Officer
Bioheart, Inc.
13794 NW 4th Street, Suite 212
Sunrise, FL 33325

Re: Bioheart, Inc.
Item 4.01 Form 8-K
Filed January 20, 2009
File No. 1-33718

Dear Mr. Leonhardt:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document 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. 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 number listed at the end of this letter.

Form 8-K filed January 20, 2009

1. Please revise the filing to specify the period “through the date of this current report on Form 8-K” as the “interim period through January 13, 2009”. Your current disclosure does not specify a period.
2. To the extent that you make changes to the Form 8-K to comply with our comments, please obtain and file an updated Exhibit 16 letter from the former accountant stating whether the accountant agrees with the statements made in your revised Form 8-K.

As appropriate, please amend your filing and respond to these comments within five business days or tell us when you will respond. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and 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.

If you have any questions, please call me at (202) 551-3627.

Sincerely,

Sasha Singh Parikh
Staff Accountant