



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-4631

December 18, 2013

Via E-Mail

Mr. Alain J. Castro
Chief Executive Officer and Director
Ener-Core, Inc.
9400 Toledo Way
Irvine, CA 92618

**Re: Ener-Core, Inc.
Registration Statement on Form S-1
Filed November 27, 2013
File No. 333-192612**

Dear Mr. Castro:

We have limited our review of your registration statement to those issues that we have addressed in our comments. In some of our comments, we may ask you to provide us information so that we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. Where you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

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

Registration Statement Cover Page

1. Our EDGAR system indicates that your primary standard industrial classification code number is 2890 and not 3511. Please revise or advise.
2. Since the securities being registered are to be offered on a delayed or continuous basis under Rule 415, please check the Rule 415 box.

Calculation of Registration Fee

3. Please indicate by footnote that 36,400 shares of the common stock being registered are issuable upon exercise of common stock purchase warrants. We note the disclosures in footnotes (6) and (14) to the selling stockholders table on page 16.

Selling Stockholders, page 15

4. As currently drafted, your disclosure suggests that each of the selling stockholders received the shares being registered in connection with the merger-related private placement. However, it appears that some of the stockholders received their shares in transactions other than the merger. We note, for example, the disclosure on page 40 that you issued shares of common stock to the SAIL entities in March 2013, April 2013, and June 2013, and the disclosure in the footnotes to the table relating to the issuance of warrants as compensation for placement agents. Please revise your disclosure to clearly explain when and in what specific transaction each of the selling stockholders acquired the shares of common stock being registered for resale. We may have further comment after review of your response.
5. Please tell us whether any of the selling stockholders is a broker-dealer or an affiliate of a broker-dealer. For any selling stockholder who is a broker-dealer, the prospectus should state that the selling stockholder is an underwriter. For any selling stockholder who is an affiliate of a broker-dealer, the prospectus should state that the selling stockholder purchased the securities in the ordinary course of business and at the time of the purchase of the securities to be resold had no agreements or understandings, directly or indirectly, with any person to distribute the securities. If a selling stockholder is unable to provide these representations, then the prospectus should state that the selling stockholder is an underwriter. Note that broker-dealers and their affiliates who received their securities as compensation for underwriting activities need not be identified as underwriters.

Legal Matters, page 19

6. Provide counsel's address as required by paragraph 23 of Schedule A to the Securities Act.

Exhibit 5.1

7. We note that counsel's opinion only covers the shares "now issued." Counsel must also opine that the 36,400 shares of common stock issuable upon exercise of common stock purchase warrants will be legally issued, fully paid, and nonassessable. Please revise.

Exhibit 10.18

8. We note that you did not file the attachments to the exhibit. Unlike Item 601(b)(2) of Regulation S-K, Item 601(b)(10) of Regulation S-K has no provision for excluding attachments to an exhibit. Please refile the exhibit with its attachments.

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 that the Securities Act and all applicable Securities 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 that they have made.

Notwithstanding our comments, if you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act and the Securities Exchange Act as they relate to the proposed public offering of the securities specified in the registration statement. Please allow adequate time for us to review any amendment before the requested effective date of the registration statement.

You may direct questions on other comments and disclosure issues to Edward M. Kelly, Senior Counsel, at 202-551-3728 or Erin K. Jaskot, Staff Attorney, at (202) 551-3442

Sincerely,

/s/ Erin K. Jaskot, *for*

Pamela A. Long
Assistant Director

cc: Via E-Mail
Kevin K. Leung, Esq.

Mr. Alain J. Castro
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LKP Global Law, LLP