



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

DIVISION OF  
CORPORATION FINANCE

November 28, 2012

Via E-mail

Mr. Keith Murphy  
Chief Executive Officer and President  
Organovo Holdings, Inc.  
6275 Nancy Ridge Drive  
San Diego, California 92121

**Re: Organovo Holdings, Inc.  
Tender Offer Statement on Schedule TO  
Filed on November 16, 2012  
File No. 005-86817**

Dear Mr. Murphy:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your filing, 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 or do not believe an amendment is appropriate, please tell us why in your response.

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

General

1. We note that the offer is limited to persons who are accredited investors. Please provide an analysis as to Rule 13e-4(f)(8)(i), which requires that the offer be open to all security holders.
2. Please provide the disclosure required by Item 1004(a)(1)(viii) of Regulation M-A regarding the manner in which securities will be accepted for payment.

Lock-Up Period, page 24

3. Disclosure indicates that security holders may not sell shares issuable in the offer for a period of time commencing on the exercise date and ending on the later of twenty days after exercise or five business days after the expiration date. This suggests that warrants can be exercised at the revised exercise price prior to the expiration date. Please confirm and disclose that this is not the case, or advise how this is consistent with Rule 14e-1(a).
4. Please confirm and disclose that you will issue common stock upon the exercise of the warrants promptly, rather than “prior to the expiration of a holder’s Lock-Up Period” as disclosed on page 1. See Rule 14e-1(c).

Section 9. Withdrawal Rights, page 25

5. Disclosure indicates that a security holder may not withdraw an election to participate following the expiration date. Please revise to disclose the date certain after which a security holder may in fact withdraw securities if not yet accepted for payment. See Rule 13e-4(f)(2)(ii).
6. Disclosure indicates that, if a security holder withdraws prior to the expiration date, you will return the tendered warrants and cash within 5 business days. Please advise how you determined that this is consistent with Rule 14e-1(c).

Section 10. Registration of Warrant Shares, page 26

7. Disclosure indicates that the offer will not affect the Registration Statement on Form S-1 (File No. 333-182101) for holders named as selling shareholders in the registration statement. Please provide an analysis supporting this conclusion.

Section 11. Trading Market and Price Range of Common Stock, page 26

8. Please provide the disclosure required by Item 1002(c) of Regulation M-A for the warrants, or state that there is no established trading market for the warrants.

Section 15. Financial Information Regarding the Company, page 30

9. Given that financial information required by Item 10 of Schedule TO has been incorporated by reference into the schedule, summary financial information, as described in Item 1010(c) of Regulation M-A, including the ratio of earnings to fixed charges, and pro forma information if material, must be disseminated to security holders. See Instruction 6 to Item 10 of Schedule TO and Interpretation I.H.7 in the July 2001 Interim Supplement to Publicly Available Telephone Interpretations, available on our website. Please disseminate this information to security holders.

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10. Please provide pro forma information pursuant to Item 1010(b) of Regulation M-A, and a brief statement as to the accounting treatment of the transaction pursuant to Item 1004(a)(1)(xi) of Regulation M-A, or advise why you believe that this information is not material.

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 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 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.

You may contact me at (202) 551-3503 if you have any questions regarding our comments.

Sincerely,

/s/ David L. Orlic

David L. Orlic  
Special Counsel  
Office of Mergers and Acquisitions

cc: Via E-mail  
Jeffrey C. Thacker, Esq.  
DLA Piper LLP (US)