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March 27, 2012

Division of Corporation Finance
U.S. Securities & Exchange Commission
100 F Street, NE
Washington, D.C. 20549

Attention: Mr. Jeffrey Riedler
Ms. Keira Ino
Mr. Gustavo Rodriguez
Mr. Michael Rosenthal
Ms. Jennifer Riegel

Re: Organovo Holdings, Inc.
Form 8-K
Filed February 13, 2012
No. 333-169928

Ladies and Gentlemen:

We are writing on behalf of our client Organovo Holdings, Inc. (the "Company") in connection with the letter the Company received from the staff (the "Staff") of the Securities and Exchange Commission (the "Commission"), dated March 13, 2012, regarding the Current Report on Form 8-K, File No. 333-169928 ("Form 8-K"), filed by the Company with the Commission on February 13, 2012. The Company is currently in the process of preparing an amendment to the Form 8-K which will include its audited financial statements for the fiscal year ended December 31, 2011. The Company intends to file this amendment by Friday, March 30, 2012. With this amendment, the Company also intends to respond to the comments received from the Staff. We believe this combined filing will facilitate the Staff's review of the Company's Form 8-K. As a result, the Company is requesting an extension of the 10 business day response period set forth in the Staff's letter.

If you have any questions regarding the foregoing, please do not hesitate to call me at (858) 638-6728.

Very truly yours,

DLA Piper LLP (US)

/s/ Jeff Thacker

Jeffrey C. Thacker
Partner
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