



DIVISION OF
CORPORATION FINANCE

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

June 24, 2011

Via E-mail

Frank M. Reynolds
Chief Executive Officer
InVivo Therapeutics Holdings Corp.
One Broadway, 14th Floor
Cambridge, MA 02142

**Re: InVivo Therapeutics Holdings Corp
Amended Registration Statement on Form S-1
Filed June 9, 2011
File No. 333-171998**

Dear Mr. Reynolds:

We have reviewed your registration statement 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 registration statement and providing the requested information. 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 registration statement and the information you provide in response to these comments, we may have additional comments.

Prospectus Summary, page 1

1. We note your response to our prior comment number 1. Please be advised that the exemption from registration provided by Section 4(1) of the Securities Act of 1933 is not available for sales by an "issuer, underwriter or dealer" with respect to the subject securities. Please tell us why you believe that InVivo Therapeutics Holdings Corp. should not be deemed an underwriter of the split off securities. See Section 2(a)(11) of the Securities Act of 1933.
2. Your disclosure in response to prior comment 3 regarding your plans to develop your product should also address the status and timing of the investigational device exemption that you require. Please revise.

Clinical Regulatory Plan, page 33

3. Refer to prior comment 8. Your disclosure should address the timeframe in which IDEs are typically granted by the FDA for products like yours, as well as what data that must be gathered and submitted in connection with your IDE application. Also, tell us why you do not know when in 2011 you will submit the application for an IDE. Finally, please expand your disclosure to describe the feedback received from FDA at the pre-IDE meeting.

Intellectual Property, page 34

4. We note your responses to prior comment 10. We may have further comment following the resolution of the confidential treatment request.

Certain Relationships and Related Transactions, page 50

5. Please provide a more detailed response to the second sentence of prior comment 11 that explains clearly the basis for reliance upon the section 4(1) exemption. Cite all authority on which you rely. In light of the provisions of Rule 144(i) which make clear that Rule 144 is not available to secondary sales of shell company shares, and the guidance set forth in SEC Release No. 33-8869, please provide further analysis as to why you believe that Section 4(1) was available for the September 2010 transaction.

Note 9. Bridge Notes Payable, page F-15

Note 11. Common Stock, page F-18

6. We have considered your response to our prior comments 9 and 10 in our letter dated May 11, 2011. Please revise your financial statements in this Form S-1 to apply the accounting conclusions discussed with you on our telephone call on June 23, 2011. In addition, amend your Form 10-K for the year ended December 31, 2010 and your Form 10-Q for the period ended March 31, 2011 to also reflect those accounting conclusions.

Exhibits and Financial Statement Schedules, page II-3

7. Please tell us where you have filed the amendment dated May 25, 2011 referenced in the last paragraph on page 34 to the License Agreement dated July 2007 between InVivo Therapeutics Corp. and Children's Medical Center Corporation.

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 Act of 1933 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 they have made.

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Notwithstanding our comments, in the event 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 of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Kevin Kuhar, Staff Accountant, at (202) 551-3662 or Jeffery Jaramillo, Accounting Branch Chief, at (202) 551-3212 if you have questions regarding comments on the financial statements and related matters. Please contact Ruairi Regan, Staff Attorney, at (202) 551-3269 or me at (202) 551-3528 with any other questions.

Sincerely,

/s/ Amanda Ravitz

Amanda Ravitz
Assistant Director

cc (via E-mail): Thomas B. Rosedale