



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 3030

April 27, 2018

Richard Toselli, M.D.
President and Chief Executive Officer
InVivo Therapeutics Holdings Corp.
One Kendall Square, Suite B14402
Cambridge, MA 02139

**Re: InVivo Therapeutics Holdings Corp.
Registration Statement on Form S-3
Filed April 24, 2018
File No. 333-224424**

Dear Dr. Toselli:

This is to advise you that we have not reviewed and will not review your registration statement.

Please refer to Rules 460 and 461 regarding requests for acceleration. We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Please contact Tim Buchmiller at (202) 551-3635 with any questions.

Sincerely,

/s/ Tim Buchmiller for

Amanda Ravitz
Assistant Director
Office of Electronics and Machinery

cc: Rosemary G. Reilly, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP