

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**POST-EFFECTIVE AMENDMENT NO. 2 TO  
FORM S-1**

**REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

**INVIVO THERAPEUTICS HOLDINGS CORP.**

(Exact name of registrant as specified in its charter)

**Nevada**  
(State of incorporation)

**3841**  
(Primary Standard Industrial  
Classification Code Number)

**36-4528166**  
(I.R.S. Employer  
Identification Number)

**One Kendall Square, Suite B14402  
Cambridge, MA 02139  
(617) 863-5500**

(Address, including zip code and telephone number, including area code, of Registrant's principal executive offices)

**Richard Toselli, M.D.  
Chief Executive Officer  
InVivo Therapeutics Holdings Corp.  
One Kendall Square, Suite B14402  
Cambridge, MA 02139  
(617) 863-5500**

(Name, address, including zip code and telephone number, including area code, of agent for service)

**Copies to:**

**Rosemary G. Reilly, Esq.  
Wilmer Cutler Pickering Hale and Dorr LLP  
60 State Street  
Boston, Massachusetts 02109  
(617) 526-6000**

**Approximate date of commencement of proposed sale to the public:** Not applicable.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐  
Non-accelerated filer ☒

Accelerated filer ☐  
Smaller reporting company ☒  
Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

## DEREGISTRATION OF UNSOLD SECURITIES

This Post-Effective Amendment No. 2 relates to the Registration Statement on Form S-1 (File No. 333-222738) (the “Registration Statement”) of InVivo Therapeutics Holdings Corp. (the “Company”) pertaining to the resale of shares of the Company’s common stock held by the selling stockholder listed therein (the “Selling Stockholder”), which was filed with the Securities and Exchange Commission on February 9, 2018 and became effective on February 12, 2018.

The Company’s contractual obligation to maintain the effectiveness of this Registration Statement with respect to the shares of common stock held by the Selling Stockholder has terminated, and the Company wishes to discontinue the effectiveness of this Registration Statement. As a result and pursuant to the Company’s undertaking in Item 17 of Part II of this Registration Statement, the Company hereby removes from registration any and all securities registered under this Registration Statement that remain unsold as of the date hereof and terminates the effectiveness of the Registration Statement. The Registration Statement is hereby amended to reflect the deregistration of such unsold securities.

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Cambridge, Commonwealth of Massachusetts, on May 17, 2019.

INVIVO THERAPEUTICS HOLDINGS CORP.

By: /s/ Richard Toselli  
Richard Toselli  
*President and Chief Executive Officer*

Pursuant to the requirements of the Securities Act of 1933, this Post-Effective Amendment to the Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<b>Signature</b>	<b>Title</b>	<b>Date</b>
<u>/s/ Richard Toselli</u> Richard Toselli	Chief Executive Officer and Director (Principal Executive Officer)	May 17, 2019
<u>/s/ Richard Christopher</u> Richard Christopher	Principal Financial Officer (Principal Financial And Accounting Officer)	May 17, 2019
<u>*</u> C. Ann Merrifield	Director	May 17, 2019
<u>*</u> Daniel R. Marshak	Director	May 17, 2019
<u>*</u> Christina Morrison	Director	May 17, 2019
<u>*</u> Richard Roberts	Director	May 17, 2019

\* By: /s/ Richard Toselli  
Richard Toselli  
Attorney-in-Fact

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