

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

**PRE-EFFECTIVE AMENDMENT NO. 2
TO
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

INVIVO THERAPEUTICS HOLDINGS CORP.

(Exact name of registrant as specified in its charter)

Nevada
(State or other jurisdiction of
incorporation or organization)

36-4528166
(I.R.S. Employer
Identification No.)

**One Broadway, 14th Floor
Cambridge, Massachusetts 02142
(617) 475-1520**
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Francis M. Reynolds
Chief Executive Officer
InVivo Therapeutics Holdings Corp.
One Broadway, 14th Floor
Cambridge, Massachusetts 02142
(617) 475-1520**
(Name, address, including zip code, and telephone number, including area code, of agent for service)

With copies to:

**Bradley A. Jacobson, Esq.
Robert E. Puopolo, Esq.
Greenberg Traurig, LLP
One International Place
Boston, Massachusetts 02110
Telephone: (617) 310-6205
Telecopy: (617) 279-8402**

Approximate date of commencement of proposed sale to public: From time to time after this Registration Statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. ☐

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, other than securities offered only in connection with dividend or interest reinvestment plans, 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, please 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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

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

Large accelerated filer ☐

Accelerated filer ☐

Non-accelerated filer ☐ (Do not check if a smaller reporting company)

Smaller reporting company ☒

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a)

of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), shall determine.

EXPLANATORY NOTE

This Amendment No. 2 to Form S-3 Registration Statement is being filed solely to file a revised Exhibit 5.1 to the Registration Statement. Accordingly, this Amendment No. 2 consists only of Part II of the Registration Statement. The Prospectus is unchanged and has therefore been omitted.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The expenses payable by the registrant in connection with the issuance and distribution of the securities being registered are set forth in the following table (all amounts except the registration fee are estimated):

SEC registration fee	\$ 5,730
Legal fees and expenses	75,000
Accounting fees and expenses	5,000
Printing fees and expenses	10,000
Transfer agent fees and expenses	5,000
Miscellaneous expenses	5,000
Total	<u>\$105,730</u>

Item 15. Indemnification of Directors and Officers.

Nevada Revised Statutes ("NRS") Sections 78.7502 and 78.751 provide us with the power to indemnify any of our directors, officers, employees and agents. The person entitled to indemnification must have conducted himself in good faith, and must reasonably believe that his conduct was in, or not opposed to, our best interests. In a criminal action, the director, officer, employee or agent must not have had reasonable cause to believe that his conduct was unlawful.

Under NRS Section 78.751, advances for expenses may be made by agreement if the director or officer affirms in writing to repay the expenses if it is determined that such officer or director is not entitled to be indemnified.

Our bylaws include an indemnification provision under which we have the power to indemnify our directors, officers, former directors and officers, employees and other agents (including heirs and personal representatives) against all costs, charges and expenses actually and reasonably incurred, including an amount paid to settle an action or satisfy a judgment to which a director or officer is made a party by reason of being or having been a director or officer of the Company. Our bylaws further provide for the advancement of all expenses incurred in connection with a proceeding upon receipt of an undertaking by or on behalf of such person to repay such amounts unless it is determined that the party is entitled to be indemnified under our bylaws. No advance will be made by the Company to a party if it is determined that the party acted in bad faith. These indemnification rights are contractual, and as such will continue as to a person who has ceased to be a director, officer, employee or other agent, and will inure to the benefit of the heirs, executors and administrators of such a person. Our bylaws do not eliminate or limit the liability of a director for: (i) an act or omission which involves intentional misconduct, fraud or a knowing violation of law; or (ii) the payment of dividends in violation of NRS 78.300. These provisions may be sufficiently broad to indemnify such persons for liabilities arising under the Securities Act of 1933, as amended, in which case such provision is against public policy as expressed such Act and is therefore unenforceable.

We maintain an insurance policy on behalf of our directors and officers, covering certain liabilities which may arise as a result of the actions of the directors and officers.

We have entered into an indemnification agreement with each of our officers and directors pursuant to which they will be indemnified by us, subject to certain limitations, for any liabilities incurred by them in connection with their role as officers and/or directors of the Company.

Item 16. Exhibits.

The exhibits listed in the Exhibit Index immediately preceding the exhibits are filed as part of this registration statement on Form S-3.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

- (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended (the “Securities Act”);
- (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement; and
- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purposes of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at the time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) If the Registrant is relying on Rule 430B:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, such undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(a) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(7) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the indemnification provisions described herein, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this amendment no. 2 to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on this 13th day of January, 2012.

INVIVO THERAPEUTICS HOLDINGS CORP.

By: /s/ FRANCIS M. REYNOLDS
Francis M. Reynolds
Chief Executive Officer and Chief Financial Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this amendment no. 2 to the registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ FRANCIS M. REYNOLDS Francis M. Reynolds	Chairman, Chief Executive Officer and Director (Principal Executive Officer, Principal Financial Officer and Principal Accounting Officer)	January 13, 2012
* Richard J. Roberts	Director	January 13, 2012
* George Nolen	Director	January 13, 2012
* Christi M. Pedra	Director	January 13, 2012
* Adam K. Stern	Director	January 13, 2012

By: /s/ FRANCIS M. REYNOLDS
Francis M. Reynolds
Attorney-in-Fact

EXHIBIT INDEX

<u>EXHIBIT NUMBER</u>	<u>DESCRIPTION</u>
**1.1	Form of Underwriting Agreement.
**4.1	Form of Common Stock Warrant Agreement.
**4.2	Form of Unit Agreement and Unit Certificate.
*5.1	Opinion of Greenberg Traurig, LLP, counsel to the Registrant.
***23.1	Consent of Wolf & Company, P.C.
***23.2	Consent of Greenberg Traurig, LLP (included in Exhibit 5.1).
*24.1	Power of Attorney (contained in signature page).

* Filed herewith.

** To be subsequently filed by amendment to this registration statement or by a report filed under the Securities Exchange Act of 1934, as amended, and incorporated or deemed to be incorporated by reference to this registration statement.

*** Previously filed.



January 13, 2012

InVivo Therapeutics Holdings Corp.
One Broadway, 14th Floor
Cambridge, MA 02142

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as legal counsel to InVivo Therapeutics Holdings Corp., a Nevada corporation (the "Company"), in connection with the registration statement on Form S-3, as amended (the "Registration Statement"), being filed by the Company with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"), on the date hereof.

You have provided us with a draft of the Registration Statement in the form in which it will be filed with the Commission. The Registration Statement includes a base prospectus (the "Prospectus"), which provides that it will be supplemented in the future by one or more supplements to the Prospectus (each, a "Prospectus Supplement"). The Prospectus provides for the offering of the following securities: (i) shares of the Company's common stock, \$0.00001 par value per share ("Common Stock"), (ii) warrants to purchase Common Stock or Units (each as defined below) ("Warrants"), and (iii) units comprised of Common Stock and Warrants ("Units"). The Common Stock, Warrants and Units are collectively referred to as the "Securities." The Securities may be offered and sold from time to time pursuant to Rule 415 promulgated under the Act, in amounts, at prices and on terms to be determined at the time of the offering thereof, at an aggregate initial offering price not to exceed \$50,000,000.

We have made such legal and factual examinations and inquiries, including an examination of originals or copies certified or otherwise identified to our satisfaction of such documents, corporate records and instruments, as we have deemed necessary or appropriate for purposes of this opinion. In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals and the conformity to authentic original documents of all documents submitted to us as copies. As to facts material to the opinions, statements and assumptions expressed herein, we have, with your consent, relied upon oral or written statements and representations of officers and other representatives of the Company and others. We have not independently verified such factual matters.

GREENBERG TRAURIG, LLP n ATTORNEYS AT LAW n WWW.GTLAW.COM
One International Place, 20th Floor n Boston, Massachusetts 02110 n Tel 617.310.6000 n Fax 617.310.6001

In expressing our opinions below, we have assumed, with your consent, that:

(a) the Registration Statement (including any and all required post-effective amendments thereto) will have become effective under the Act and will comply with all applicable laws;

(b) the Registration Statement (including any and all required post-effective amendments thereto) will be effective under the Act and will comply with all applicable laws at the time the Securities are offered or sold as contemplated by the Registration Statement (including any and all required post-effective amendments thereto), the Prospectus and the applicable Prospectus Supplement(s);

(c) no stop order suspending the effectiveness of the Registration Statement (including any and all required post-effective amendments thereto) will have been issued and remain in effect;

(d) a Prospectus Supplement describing the Securities offered thereby and the offering thereof and complying with all applicable laws will have been prepared and filed with the Commission;

(e) the Securities will be offered and sold in the form and with the terms set forth in the Registration Statement (including any and all required post-effective amendments thereto), the Prospectus and the applicable Prospectus Supplement(s) and the organizational documents of the Company;

(f) the Securities will be offered and sold in compliance with all applicable federal and state securities laws and in the manner stated in the Registration Statement (including any and all required post-effective amendments thereto), the Prospectus and the applicable Prospectus Supplement(s);

(g) the Securities offered and sold do not and will not violate any applicable law or the organizational documents of the Company or result in a default under or breach of any agreement or instrument binding upon the Company;

(i) the Company will have obtained any and all legally required consents, approvals, authorizations and other orders of the Commission and any and all other regulatory authorities and other third parties necessary to offer and sell the Securities being offered;

(j) the Securities offered and sold comply with all requirements and restrictions, if any, applicable to the Company, whether imposed by any court or governmental or regulatory body having jurisdiction over the Company;

(k) a definitive purchase, underwriting or similar agreement (each a "Purchase Agreement") with respect to any Securities offered and sold will have been duly authorized and validly executed and delivered by the Company and the other parties thereto; and

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(l) any Securities or other securities issuable upon conversion, exchange or exercise of any Security being offered and sold will be duly authorized, created and, if appropriate, reserved for issuance upon such conversion, exchange or exercise.

Our opinions expressed below are subject to the qualifications that we express no opinion as to the applicability of, compliance with or effect of: (i) any bankruptcy, insolvency, reorganization, preference, fraudulent conveyance, fraudulent transfer, moratorium or other similar laws relating to or affecting the rights and remedies of creditors generally; (ii) general principles of equity, whether considered in a proceeding in equity or at law (including the possible unavailability of specific performance or injunctive relief), concepts of materiality, reasonableness, good faith and fair dealing, and the discretion of the court before which a proceeding is brought; or (iii) public policy considerations that may limit the rights of parties to obtain certain remedies.

We express no opinion as to (i) any provision to the extent it requires any party to indemnify any other person against loss in obtaining the currency due following a court judgment rendered in another currency, (ii) any provision providing for the indemnification of or contribution to a party with respect to a liability where such indemnification or contribution is contrary to public policy, (iii) any provision for liquidated damages, late charges, monetary penalties or other economic remedies to the extent such provisions are deemed to constitute a penalty, (iv) consents to, or restrictions upon, governing law, jurisdiction, venue, arbitration, remedies or judicial relief, (v) any provision requiring the payment of attorneys' fees, where such payment is contrary to law or public policy, (vi) advance waivers of claims, defenses, rights granted by law, or notice, opportunity for hearing, evidentiary requirements, statutes of limitation, trial by jury or at law, or other procedural rights, (vii) waivers of broadly or vaguely stated rights, (viii) provisions for exclusivity, election or cumulation of rights or remedies, (ix) provisions authorizing or validating conclusive or discretionary determinations, (x) proxies, powers and trusts, (xi) provisions prohibiting, restricting, or requiring consent to assignment or transfer of any right or property, (xii) any provision to the extent it requires that a claim with respect to a security denominated in other than U.S. dollars (or a judgment in respect of such a claim) be converted into U.S. dollars at a rate of exchange at a particular date, to the extent applicable law otherwise provides, (xiii) the severability, if invalid, of provisions to the foregoing effect, (xiv) the securities or "Blue Sky" laws of any state to the offer or sale of the Securities, and (xv) the antifraud provisions of the securities or other laws of any jurisdiction.

We have also assumed, with your consent, that: (i) the Warrants and any related warrant agreement and the Units and any related unit agreement (collectively, the "Documents") will be governed by the internal laws of The Commonwealth of Massachusetts; (ii) each of the Documents will be duly authorized, executed and delivered by the parties thereto; (iii) each of the Documents will constitute legally valid and binding obligations of the parties thereto other than the Company, enforceable against each of them in accordance with their respective terms; and (iv) the status of each of the Documents as legally valid and binding obligations of the parties thereto will not be affected by any (a) breaches of, or

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defaults under, any agreements or instruments, (b) violations of any statutes, rules, regulations or court or governmental orders, or (c) failures to obtain required consents, approvals or authorizations from, or to make required registrations, declarations or filings with, any governmental authorities or other third parties.

We are opining herein only as to the federal laws of the United States, the internal laws of The Commonwealth of Massachusetts, and the Nevada General Corporation Law, in each case as in effect on the date of this opinion, and we express no opinion with respect to the laws of any other jurisdiction or, in the case of Nevada, any other laws, or as to any matters of municipal law or the laws of any other local agencies within any state.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof:

1. The Company has the authority pursuant to its Articles of Incorporation, as amended (the “Charter”), to issue up to an aggregate of 200,000,000 shares of Common Stock. Upon adoption by the board of directors of the Company of a resolution in form and content as required by applicable law duly authorizing the issuance of shares of Common Stock (with such shares, together with all shares of Common Stock previously issued or reserved for issuance and not duly and lawfully retired, not exceeding an aggregate of 200,000,000 shares), and upon issuance and delivery of and payment of legal consideration in excess of the par value thereof in accordance with the applicable Purchase Agreement and all applicable law, such shares of Common Stock will be validly issued, fully paid and nonassessable.

2. When (a) a warrant agreement, if any, has been duly authorized by all necessary corporate action of the Company (including, without limitation, the adoption by the board of directors of the Company of a resolution in form and content as required by applicable law duly authorizing the execution and delivery of such warrant agreement) and duly executed and delivered by the Company, (b) the specific terms of a particular issuance of Warrants have been duly established in accordance with such warrant agreement, if any, and all applicable law and authorized by all necessary corporate action of the Company (including, without limitation, the adoption by the board of directors of the Company of a resolution in form and content as required by applicable law duly authorizing the issuance and delivery of the Warrants), and (c) the Warrants have been duly executed, issued and delivered against payment therefor in accordance with such warrant agreement, if any, the applicable Purchase Agreement and all applicable law (and assuming the satisfaction of the conditions described in the applicable numbered paragraphs of this opinion letter with respect to our opinion regarding any Securities issuable upon exercise of the Warrants), such Warrants will be legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

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3. When (a) an unit agreement has been duly authorized by all necessary corporate action of the Company (including, without limitation, the adoption by the board of directors of the Company of a resolution duly authorizing the execution and delivery of such unit agreement) and duly executed and delivered by the Company, (b) the specific terms of a particular issuance of the related Units have been duly established in accordance with such unit agreement and all applicable law and authorized by all necessary corporate action of the Company (including, without limitation, the adoption by the board of directors of the Company of a resolution in form and content as required by applicable law duly authorizing the issuance and delivery of the Units), and (c) such Units have been duly executed, issued and delivered against payment therefor in accordance with such unit agreement, the applicable Purchase Agreement and all applicable law (and assuming the satisfaction of the conditions described in the applicable numbered paragraphs of this opinion letter with respect to our opinion regarding the Securities underlying the Units), such Units will be legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

This opinion is being delivered solely for the benefit of the Company and such other persons as are entitled to rely upon it pursuant to applicable provisions of the Securities Act. This opinion may not be used, quoted, relied upon or referred to for any other purpose nor may this opinion be used, quoted, relied upon or referred to by any other person, for any purpose, without our prior written consent.

We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Prospectus under the heading "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Greenberg Traurig, LLP

GREENBERG TRAURIG, LLP

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InVivo Therapeutics Holdings Corp.
One Broadway, 14th Floor
Cambridge, MA 02142

January 13, 2012

BY EDGAR

Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Attn: Amanda Ravitz
Assistant Director

Re: InVivo Therapeutics Holdings Corp.
Amendment No. 1 to Registration Statement to Form S-1 on Form S-3
Filed January 9, 2012
File No. 333-178584

Dear Ms. Ravitz:

This letter is submitted on behalf of InVivo Therapeutics Holdings Corp. (the “Company”) in response to the comments of the staff of the Division of Corporation Finance (the “Staff”) of the Securities and Exchange Commission (the “Commission”) with respect to the Company’s Amendment No. 1 to Registration Statement to Form S-1 on Form S-3 (the “Registration Statement”) filed on January 9, 2012, as set forth in your letter dated January 13, 2012 to Francis M. Reynolds (the “Comment Letter”). The Company is concurrently filing via EDGAR Pre-Effective Amendment No. 2 to Form S-3 in response to the Staff’s comments.

For reference purposes, the text of the Staff comments contained in the Comment Letter has been reproduced herein with responses below each numbered comment. For your convenience, we have italicized the reproduced Staff comments from the Comment Letter and we have bolded the headings of our responses thereto.

Exhibit 5.1

Comment No. 1

Please tell us why the limitation in the second full paragraph on page 5 is appropriate or remove it.

Response to Comment No. 1

In response to the Staff's comment, the limitation has been removed from the legal opinion.

* * * * *

If you should have any questions about this letter, please do not hesitate to call the undersigned at (617) 475-1520 or Bradley A. Jacobson of Greenberg Traurig, LLP at (617) 310-6205.

Sincerely,

/s/ Frank M. Reynolds

Frank M. Reynolds
Chief Executive Officer