UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

SCHEDULE TO

(Rule 14d-100)

TENDER OFFER STATEMENT UNDER SECTION 14(d)(1) OR 13(e)(1) OF THE SECURITIES EXCHANGE ACT OF 1934 (Amendment No. 2)

INVIVO THERAPEUTICS HOLDINGS CORP.

(Name of Subject Company (Issuer))

INVIVO THERAPEUTICS HOLDINGS CORP. (Issuer)

(Name of Filing Persons (Identifying status as offeror, issuer or other person))

Warrants to Purchase Common Stock dated October 26, 2010
Investor Warrants to Purchase Common Stock
Placement Agent Warrants to Purchase Common Stock
(Title of Class of Securities)

N/A

(CUSIP Number of Class of Securities)

Frank Reynolds
Chief Executive Officer
InVivo Therapeutics Holdings Corp.
One Kendall Square, Suite B14402
Cambridge, Massachusetts 02139
Phone: (617) 863-5500

(Name, address, and telephone numbers of person authorized to receive notices and communications on behalf of filing persons)

With copies to:

Bradley Jacobson, Esq. Greenberg Traurig, LLP One International Place Boston, Massachusetts 02110 Phone: (617) 310-6205 Facsimile: (617)) 279-8402

CALCULATION OF FILING FEE

| Transaction Valuation* | Amount of Filing Fee |
|------------------------|----------------------|
| \$14,284,044 | \$1,948.35 |

The transaction value is estimated for solely for purposes of calculating the amount of the filing fee. The calculation assumes that all eligible warrants to purchase 15,009,608 shares of the Issuer's common stock subject to the offer will be exchanged for new warrants pursuant to the terms of the offer. The aggregate value of such warrants was calculated based on the Black-Scholes pricing model.

| X | ☑ Check the box if any part of the fee is offset as provided by Rule 0-11(a)(2) and identify the filing with which the offsetting fee was previous Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing. | | | |
|---|---|---|--|--|
| | Amount Previously Paid: \$1,948.35 Form or Registration No.: 005-85686 | Filing Party: InVivo Therapeutics Holdings Corp. Date Filed: April 8, 2013 | | |
| | Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer. | | | |
| Check the appropriate boxes below to designate any transactions to which the statement relates: | | | | |
| | □ third-party tender offer subject to Rule 14d □ issuer tender offer subject to Rule 13e-4. □ going-private transaction subject to Rule 13 amendment to Schedule 13D under Rule 13 | Be-3. Bd-2. | | |
| | Check the following box if the filing is a final amendmen | t reporting the results of the tender offer: \square | | |

This Amendment No. 2 (this "Amendment") amends and supplements the Tender Offer Statement on Schedule TO originally filed with the U.S. Securities and Exchange Commission (the "SEC") by InVivo Therapeutics Holdings Corp., a Nevada corporation (the "Company" or "InVivo"), on April 8, 2013, as amended by Amendment No. 1 to Schedule TO filed with the SEC on April 26, 2013 (as amended, the "Schedule TO") in connection with the offer by the Company to exchange certain of its outstanding warrants to purchase common stock (the "Original Warrants") for new warrants (the "New Warrants") with the same terms except (i) the expiration date of the New Warrants will be extended two years and (ii) weighted average anti-dilution provisions will be removed from the New Warrants. The offer is subject to the terms and conditions set forth in the Offer to Exchange, dated April 8, 2013, a copy of which was filed with the Schedule TO as Exhibit (a)(1)(A) (the "Offer to Exchange"), and in the Election to Participate, a copy of which was filed with the Schedule TO as Exhibit (a)(1) (B) (the "Election to Participate"), which together with the Offer to Exchange, as each may be amended and supplemented from time to time, constitute the Offer (the "Offer"). The Offer was terminated solely with respect to the Investor Warrants (as defined in the Offer to Exchange) on May 3, 2013.

The information contained in the Offer to Exchange and the Election to Participate is incorporated herein by reference, except that such information is hereby amended and supplemented to the extent specifically provided herein.

Items 1 through 11

The information set forth in the Offer to Exchange is hereby amended and supplemented as follows:

On May 3, 2013, the Company determined to terminate the Offer solely with respect to the Investor Warrants and issued a press release in connection therewith. A copy of the press release issued by the Company on May 3, 2013 announcing the termination of the Offer with respect to the Investor Warrants is filed as Exhibit (a)(1)(H) and is incorporated herein by reference.

The Company terminated the Offer solely with respect to the Investor Warrants because, as a condition of the Offer and as set forth in Section 8 of the Offer to Exchange, the Company may terminate or amend the Offer with respect to the Investor Warrants, if at any time on or after the commencement of the Offer and before the expiration of the Offer, the closing bid price of its common stock equals or exceeds \$2.80 per share for 20 consecutive trading days, which occurred on May 2, 2013. The Company will not accept any Investor Warrants tendered for exchange and any Investor Warrants previously tendered for exchange will be promptly returned

The Offer with respect to the remaining eligible warrants will terminate as of 11:59 p.m. (Eastern Time) on May 17, 2013 (an extension from the original termination date of May 6, 2013).

Item 12. Exhibits. Offer to Exchange, dated April 8, 2013, as amended on April 26, 2013 as reflected in Amendment No. 1 filed with the SEC on April 26, 2013 (a)(1)(A) *and on May 3, 2013 as reflected in Amendment No. 1 filed with the SEC on May 3, 2013 (a)(1)(B) *Election to Participate, as amended on April 26, 2013 as reflected in Amendment No. 1 filed with the SEC on April 26, 2013 (a)(1)(C) *Notice of Withdrawal Form of New Warrants to be Exchanged for Eligible Warrants (a)(1)(D) *(a)(1)(E) *Letter from Frank Reynolds, Chairman, Chief Executive Officer and Chief Financial Officer of the Company, to Holders of Eligible Warrants dated April 8, 2013 (a)(1)(F) *Press release dated April 8, 2013 (a)(1)(G) *Transcript of Company Webcast dated April 8, 2013 (a)(1)(H) ** Press release dated May 3, 2013 announcing termination of Offer with respect to Investor Warrants Form of Investor Warrant of InVivo Therapeutics Holdings Corp. (incorporated by reference from Exhibit 4.3 to the Company's Current (d)(1)(A)Report on Form 8-K, as filed with the SEC on November 1, 2010) (d)(1)(B)Form of Warrant of InVivo Therapeutics Holdings Corp. issued to Bridge Lenders (incorporated by reference from Exhibit 4.5 to the Company's Current Report on Form 8-K, as filed with the SEC on November 1, 2010) Form of Warrant of InVivo Therapeutics Holdings Corp. (\$1.00 exercise price) issued to Placement Agent (incorporated by reference from (d)(1)(C)Exhibit 4.2 to the Company's Current Report on Form 8-K, as filed with the SEC on December 9, 2010) Form of Warrant of InVivo Therapeutics Holdings Corp. (\$1.40 exercise price) issued to Placement Agent (incorporated by reference from (d)(1)(D)Exhibit 4.3 to the Company's Current Report on Form 8-K, as filed with the SEC on December 9, 2010) (d)(1)(E)Form of Registration Rights Agreement, by and between InVivo Therapeutics Holdings Corp. and the investors in the offering (incorporated by reference from Exhibit 10.4 to the Company's Current Report on Form 8-K, as filed with the SEC on November 1, 2010)

from Exhibit 10.4 to the Company's Current Report on Form 8-K, as filed with the SEC on December 9, 2010)

(d)(1)(F)

Placement Agent Agreement dated October 4, 2010, between InVivo Therapeutics Corp. and Placement Agent (incorporated by reference

(d)(1)(E) Form of Registration Rights Agreement, by and between InVivo Therapeutics Holdings Corp. and the investors in the offering (incorporated by reference from Exhibit 10.4 to the Company's Current Report on Form 8-K, as filed with the SEC on November 1, 2010)

(d)(1)(G) Placement Agent Agreement dated October 4, 2010, between InVivo Therapeutics Corp. and Placement Agent (incorporated by reference from Exhibit 10.4 to the Company's Current Report on Form 8-K, as filed with the SEC on December 9, 2010)

^{*} Previously filed.

^{**} Filed herewith.

SIGNATURE

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

INVIVO THERAPEUTICS HOLDINGS CORP.

By: Frank M. Reynolds
Name: Frank M. Reynolds
Title: Chief Executive Officer

Date: May 3, 2013

EXHIBIT INDEX

| (a)(1)(A) * | Offer to Exchange, dated April 8, 2013, as amended on April 26, 2013 as reflected in Amendment No. 1 filed with the SEC on April 26, 2013 |
|--------------|---|
| (a)(1)(B) * | Election to Participate, as amended on April 26, 2013 as reflected in Amendment No. 1 filed with the SEC on April 26, 2013 |
| (a)(1)(C) * | Notice of Withdrawal |
| (a)(1)(D) * | Form of New Warrants to be Exchanged for Eligible Warrants |
| (a)(1)(E) * | Letter from Frank Reynolds, Chairman, Chief Executive Officer and Chief Financial Officer of the Company, to Holders of Eligible Warrants dated April 8, 2013 |
| (a)(1)(F) * | Press release dated April 8, 2013 |
| (a)(1)(G) * | Transcript of Company Webcast dated April 8, 2013 |
| (a)(1)(H) ** | Press release dated May 3, 2013 announcing termination of Offer with respect to Investor Warrants |
| (d)(1)(A) | Form of Investor Warrant of InVivo Therapeutics Holdings Corp. (incorporated by reference from Exhibit 4.3 to the Company's Current Report on Form 8-K, as filed with the SEC on November 1, 2010) |
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^{*} Previously filed.

^{**} Filed herewith.



CONTACT:

Brian Luque Director, Investor Relations (617) 863-5535 bluque@invivotherapeutics.com

InVivo Therapeutics Announces Call Notice for Exercise of Warrants and Partial Termination of Warrant Exchange Offer

CAMBRIDGE, Mass. (May 3, 2013) – InVivo Therapeutics Holdings Corp. (NVIV), a developer of groundbreaking technologies for the treatment of spinal cord injuries (SCI) and other neurotrauma conditions, today announced that it has issued a call notice for the early exercise of warrants issued to investors on October 26, 2010, November 10, 2010 and December 3, 2010 (the "Investor Warrants"). Under the terms of the Investor Warrants, the Company has the right to call for an early exercise when the Company's closing stock price equals or exceeds \$2.80 per share for twenty consecutive trading days, which occurred on May 2, 2013.

Since the start of April 2013, the Company has already received \$5.7 million from the exercise of Investor Warrants and expects to receive an additional \$10.4 million from the early exercise of the warrants being called. On June 3, 2013, all Investor Warrants that are not exercised will be redeemed and the derivative warrant liability associated with the exercise or redemption of these warrants will be removed from InVivo's books. This will eliminate a major impediment towards the uplisting of the Company's stock to a national securities exchange.

The Company is also terminating its previously announced offer to exchange with respect to the Investor Warrants only. The offer to exchange is described in the Offer to Exchange and related Election to Participate dated April 8, 2013 and amended on April 26, 2013 (the "Offer"). Pursuant to Sections 6 and 8 of the Offer to Exchange, the Company has the right to terminate the Offer with respect to the Investor Warrants if the closing price of the Company's common stock equals or exceeds \$2.80 per share for twenty consecutive trading days. As a result of this partial termination of the offer to exchange, the Company will not accept any Investor Warrants tendered for exchange and will promptly return any Investor Warrants that have been tendered for exchange. The Offer with respect to the other remaining eligible warrants will terminate as of 11:59 p.m. (Eastern Time) on May 17, 2013.

"Since early April 2013 when we announced FDA approval to commence a first-in man clinical study for our biopolymer scaffolding to treat spinal cord injuries and Humanitarian Use Device status for the product, Wall Street has taken notice and our stock price has appreciated significantly," stated Frank Reynolds, InVivo's Chief Executive Officer. "This has permitted us to call the Investor Warrants which will pave the way for an uplisting to a national securities exchange, a milestone that we expect will increase liquidity and unlock additional inherent value in our company."



Important Notice

This press release is for informational purposes only and is neither an offer to exchange nor a solicitation of an offer to exchange any of the company's warrants. The offer to exchange will be made only pursuant to the Offer to Exchange, the related election to participate and other materials that provided to holders of warrants eligible to be exchanged in the offer and have been filed with the SEC. Holders of warrants eligible to be exchanged in the offer should read those materials and the documents incorporated therein by reference carefully because they will contain important information, including the various terms of, and conditions to, the exchange offer. The company has filed a Tender Offer Statement on Schedule TO with the Securities and Exchange Commission, which includes the Offer to Exchange, the related election to participate and other materials, and is available at no charge at the Securities and Exchange Commission's website at www.sec.gov, or from the company by calling (617) 863-5599. Holders of warrants eligible to be exchanged in the offer are urged to read those materials carefully prior to making any decisions with respect to the exchange offer.

About InVivo Therapeutics

InVivo Therapeutics Holdings Corp. is focused on utilizing polymers as a platform technology to develop treatments to improve function in individuals paralyzed as a result of traumatic spinal cord injury. The Company was founded in 2005 on the basis of proprietary technology co-invented by Robert Langer, ScD, Professor at Massachusetts Institute of Technology, and Joseph P. Vacanti, MD, who is affiliated with Massachusetts General Hospital. In 2011, data from a Company study was published in the Journal of Neuroscience Methods and won the prestigious Apple Award from the American Spinal Injury Association recognizing excellence in SCI research. The publicly traded company is headquartered in Cambridge, MA. For more details, visit www.invivotherapeutics.com.

Safe Harbor Statement

Any statements contained in this press release that do not describe historical facts may constitute forward-looking statements within the meaning of the federal securities laws. These statements include statements regarding the expected exercise of the Investor Warrants prior to their redemption, the amount of cash expected to be received as a result of such exercises, the potential uplisting of our common stock to a national securities exchange, and the increase in liquidity that would result from an uplisting of our common stock. Any forward-looking statements contained herein are based on current expectations, but are subject to a number of risks and uncertainties. Factors that could cause actual future results to differ materially from current expectations include, but are not limited to, the actual number of Investor Warrants exercised prior to redemption, as well as other factors identified and described in more detail in our filings with the SEC, including our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and our current reports on Form 8-K. We do not undertake to update any forward-looking statements made by us.