

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

**SCHEDULE 13G**

**Under the Securities Exchange Act of 1934  
(Amendment No. 1)\***

**INVIVO THERAPEUTICS HOLDINGS CORP.**  
(Name of Issuer)

**Common Stock**  
(Title of Class of Securities)

46186M 100  
(CUSIP Number)

**December 3, 2010**  
(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- ☐ Rule 13d-1(b)
- ☒ Rule 13d-1(c)
- ☐ Rule 13d-1(d)

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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**SCHEDULE 13G  
(Amendment No. 1)**

CUSIP NO. 46186M 100

<b>1</b>	NAME OF REPORTING PERSON S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON  <b>Kevin B. Kimberlin</b>		
<b>2</b>	CHECK THE APPROPRIATE BOX IF MEMBER OF A GROUP  (a) (b) <b>X*</b>		
<b>3</b>	SEC USE ONLY		
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION  <b>USA</b>		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER  <b>7,187,321</b>	
	<b>6</b>	SHARED VOTING POWER  <b>0</b>	
	<b>7</b>	SOLE DISPOSITIVE POWER  <b>7,187,321</b>	
	<b>8</b>	SHARED DISPOSITIVE POWER  <b>0</b>	
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  <b>7,187,321**</b>		
<b>10</b>	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES		
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  <b>12.6%***</b>		
<b>12</b>	TYPE OF REPORTING PERSON  <b>IN</b>		

\* The reporting person expressly disclaims (i) the existence of any group and (ii) beneficial ownership with respect to any shares other than the shares owned of record by such reporting person and as set forth below.

\*\* This amount consists of: (i) 1,947,321 shares of the Company's common stock, \$.00001 par value per share (the "Common Stock") held by Optical Partners, LLC and (ii) warrants to purchase 5,240,000 shares of Common Stock held by Spencer Trask Ventures, Inc. Mr. Kimberlin has voting and investment control of the securities held by Optical Partners, LLC and Spencer Trask Ventures, Inc. Mr. Kimberlin disclaims beneficial ownership of these securities except as relates to his pecuniary interest in such securities.

\*\*\* Based on 51,647,171 shares of the Company's Common Stock outstanding as of December 3, 2010.

**SCHEDULE 13G**  
**(Amendment No. 1)**

**Item 1(a). Name of Issuer:**

InVivo Therapeutics Holdings Corp.

**Item 1(b). Address of Issuer's Principal Executive Offices:**

One Broadway, 14<sup>th</sup> Floor, Cambridge, MA 02142

**Item 2(a) and (b). Name of Person Filing and Address of Principal Business or Office or, if none, Residence:**

Kevin B. Kimberlin  
c/o Spencer Trask Ventures, Inc.  
535 Madison Avenue, 12<sup>th</sup> Floor  
New York, NY 10022

**Item 2(c). Citizenship:**

United States

**Item 2(d). Title of Class of Securities:**

Common Stock

**Item 2(e). CUSIP Number:**

46186M 100

**Item 3. If this statement is filed pursuant to Rules 13d-1(b), or 13d-2(b) or (c), check whether the person filing is a:**

- (a) ☐ Broker or Dealer registered under Section 15 of the Act.
  - (b) ☐ Bank as defined in Section 3(a)(6) of the Act.
  - (c) ☐ Insurance Company as defined in Section 3(a)(19) of the Act.
  - (d) ☐ Investment company registered under Section 8 of the Investment Company Act of 1940.
  - (e) ☐ An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);
  - (f) ☐ An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);
  - (g) ☐ A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G);
  - (h) ☐ A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
  - (i) ☐ A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940
  - (j) ☐ Group, in accordance with Rule 13d-1(b)(1)(ii)(J).
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**Item 4.****Ownership:**

(a) Amount beneficially owned:

7,187,321

(b) Percent of class:

12.6%

(c) Number of shares as to which the person has:

(i) Sole power to vote or to direct the vote:

7,187,321

(ii) Shared power to vote or to direct the vote:

-0-

(iii) Sole power to dispose or to direct the disposition of:

7,187,321

(iv) Shared power to dispose or to direct the disposition of:

-0-

**Item 5.****Ownership of Five Percent or Less of a Class:**

Not Applicable.

**Item 6.****Ownership of More Than Five Percent on Behalf of Another Person:**

Not Applicable

**Item 7.****Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person:**

Not Applicable

**Item 8.****Identification and Classification of Members of the Group:**

Not Applicable

**Item 9.****Notice of Dissolution of Group:**

Not Applicable

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**Item 10.**

**Certification:**

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

**SIGNATURE**

After reasonable 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.

Dated: December 3, 2010

/S/ KEVIN KIMBERLIN

Kevin Kimberlin

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