

INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF  
SECURITIES

OMB APPROVAL	
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Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934  
or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>KIMBERLIN KEVIN</u>  (Last) (First) (Middle) <u>535 MADISON AVENUE</u> <u>12TH FLOOR</u>  (Street) <u>NEW YORK NY</u> <u>10022</u>  (City) (State) (Zip)	2. Date of Event Requiring Statement (Month/Day/Year) <u>10/26/2010</u>	3. Issuer Name <b>and</b> Ticker or Trading Symbol <u>INVIVO THERAPEUTICS HOLDINGS CORP. [ NVIV.OB ]</u>	
		4. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director <u>X</u> 10% Owner  Officer (give title below) Other (specify below)	5. If Amendment, Date of Original Filed (Month/Day/Year)
			6. Individual or Joint/Group Filing (Check Applicable Line)  <u>X</u> Form filed by One Reporting Person  Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Beneficially Owned			
1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
Common Stock	1,947,321	I	By Optical Partners, LLC <sup>(1)</sup>

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)							
1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			
Warrant (right to purchase)	10/26/2010	10/25/2015	Common Stock	2,102,819	1	I	By Spencer Trask Ventures, Inc. <sup>(1)</sup>
Warrant (right to purchase)	10/26/2010	10/25/2015	Common Stock	2,102,819	1.4	I	By Spencer Trask Ventures, Inc. <sup>(1)</sup>
Warrant (right to purchase)	10/26/2010	09/10/2015	Common Stock	40,000	1	I	By Spencer Trask Ventures, Inc. <sup>(1)</sup>

Explanation of Responses:

1. The Reporting Person has sole investment and dispositive control over these securities and disclaims any beneficial ownership of the Issuer's securities held indirectly for the purpose of Section 16, except to the extent of his indirect pecuniary interest therein, and this report shall not be deemed an admission that the Reporting Person is the beneficial owner of such securities for the purpose of Section 16 or for any other purpose.

By Kevin B. Kimberlin 11/05/2010  
\*\* Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 5 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.