

☐ Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

1. Name and Address of Reporting Person* <u>Lorianne Masuoka K.</u>  (Last) (First) (Middle) <u>C/O INVIVO THERAPEUTICS HOLDINGS CORP.</u> <u>ONE KENDALL SQUARE, SUITE B14402</u>  (Street) <u>CAMBRIDGE</u> <u>MA</u> <u>02139</u>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>INVIVO THERAPEUTICS HOLDINGS CORP.</u> [ <u>NVIV</u> ]	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director 10% Owner  <input checked="" type="checkbox"/> Officer (give title below) Other (specify below)  <u>Chief Medical Officer</u>	
	3. Date of Earliest Transaction (Month/Day/Year) <u>03/02/2015</u>		6. Individual or Joint/Group Filing (Check Applicable Line)  <input checked="" type="checkbox"/> Form filed by One Reporting Person  Form filed by More than One Reporting Person
	4. If Amendment, Date of Original Filed (Month/Day/Year)		

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
<u>Stock Option (Right to Buy)</u>	<u>\$3.02</u>	<u>03/02/2015</u>		<u>A</u>		<u>500,000</u>		<u>(1)</u>	<u>03/02/2025</u>	<u>Common Stock</u>	<u>500,000</u>	<u>\$0</u>	<u>500,000</u>	<u>D</u>	

Explanation of Responses:

1. The option is exercisable as to 25% of the shares on the first anniversary of the date of grant, and the remaining shares vest thereafter on a monthly basis in 36 equal monthly installments.

/s/ Elizabeth W. Fraser,  
Attorney-in-Fact

03/04/2015  
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 4 (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.