

OMB APPROVAL	
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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

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>Murphy Keith</u> (Last) (First) (Middle) 6275 NANCY RIDGE DRIVE, SUITE 110 (Street) SAN DIEGO CA 92121 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>ORGANOVO HOLDINGS, INC. [ONVO]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>Chairman, CEO and President</u>
	3. Date of Earliest Transaction (Month/Day/Year) 02/18/2014	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person

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			
Common Stock	02/18/2014		S ⁽¹⁾		100,000	D	\$9.8222 ⁽²⁾	5,974,643	D	
Common Stock	02/19/2014		A		50,000	A	⁽³⁾	6,024,643	D	
Common Stock	02/19/2014		F		27,307 ⁽⁴⁾	D	\$9.86	5,997,336 ⁽⁵⁾	D	

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
Stock Option (Right to Buy) ⁽⁶⁾	\$9.86	02/19/2014		A		27,307		02/19/2014	02/19/2024	Common Stock	27,307	\$0	27,307	D	
Stock Option (Right to Buy) ⁽⁷⁾	\$9.86	02/19/2014		A		550,000		⁽⁸⁾	02/19/2024	Common Stock	550,000	\$0	550,000	D	

Explanation of Responses:

- The sale of shares was effectuated pursuant to a Rule 10b5-1 trading plan adopted by the Reporting Person.
- This transaction was executed in multiple sales through a sale order executed by a broker-dealer at prices ranging from \$9.75 to \$9.88. The price reported in this column reflects the weighted average sale price. The Reporting Person will provide upon request to the SEC staff, the Issuer, or a security holder of the Issuer, full information regarding the number of shares sold at each separate price.
- In August 2012, Mr. Murphy received a grant of performance-based restricted stock units for 200,000 shares of Issuer's common stock, with 25% of the shares vesting upon the achievement of each of four specific performance milestones prior to December 31, 2014. On February 19, 2014, the Compensation Committee of the Issuer's Board of Directors determined that, as a result of the Issuer obtaining analyst coverage for its common stock, Mr. Murphy had achieved the third of four performance milestones and had vested in an additional 50,000 shares.
- These shares were withheld at the election of the Reporting Person to satisfy tax withholding obligations in connection with the partial vesting of performance-based restricted stock units granted in August 2012.
- This number does not include 898,756 shares of common stock underlying outstanding options and 30,000 shares of common stock underlying warrants held by Mr. Murphy; post-transaction Mr. Murphy continues to beneficially own or have a right to acquire 6,926,092 shares of common stock.
- The option was automatically issued pursuant to the terms of the Reporting Person's Equity Incentive Award Agreement issued in August 2012.
- Annual long-term equity award approved by the Compensation Committee.
- 25% of the option shares vest and become exercisable on February 19, 2015 and the remaining shares vest in 12 equal quarterly installments thereafter.

/s/ Keith Murphy 02/20/2014
 ** 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 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.