

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

OMB APPROVAL	
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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) 08/28/2013	
	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			
Common Stock	08/28/2013		A		100,000	A	(1)	6,556,402	D	
Common Stock	08/28/2013		F		54,654 ⁽²⁾	D	\$5.6	6,501,748	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) ⁽³⁾	\$5.6	08/28/2013		A		54,654		08/28/2013	08/28/2023	Common Stock	54,654	\$0	54,654	D	

Explanation of Responses:

- In August 2012, Mr. Murphy received a grant of performance-based restricted stock units for 200,000 shares of the 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 August 28, 2013, the Compensation Committee of the Issuer's Board of Directors determined that, as a result of the Issuer (i) qualifying to list its shares of Common Stock on the NYSE MKT and (ii) completing an equity financing in August 2013, Mr. Murphy had achieved two of the four performance milestones and had vested in 100,000 shares.
- The 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.
- The option was automatically issued pursuant to the terms of the Reporting Person's Equity Incentive Award Agreement issued in August 2012.

/s/ Keith Murphy 08/30/2013

** 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.

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