

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) <u>6275 NANCY RIDGE DRIVE, SUITE 110</u>  (Street) <u>SAN DIEGO CA 92121</u>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>ORGANOVO HOLDINGS, INC. [ ONVO ]</u>  3. Date of Earliest Transaction (Month/Day/Year) <u>01/23/2017</u>  4. If Amendment, Date of Original Filed (Month/Day/Year)	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>  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
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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	01/23/2017		s <sup>(1)</sup>		4,900	D	\$3.5133 <sup>(2)</sup>	6,059,015	D	
Common Stock	01/24/2017		s <sup>(1)</sup>		20,100	D	\$3.5045 <sup>(3)</sup>	6,038,915 <sup>(4)</sup>	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)
						Date Exercisable	Expiration Date					
				Code	V	(A)	(D)	Title	Amount or Number of Shares			

Explanation of Responses:

1. The sale of shares was effectuated pursuant to a Rule 10b5-1 trading plan adopted by the Reporting Person.
2. This transaction was executed in multiple sales through a sale order executed by a broker-dealer at prices ranging from \$3.50 to \$3.54. 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.
3. This transaction was executed in multiple sales through a sale order executed by a broker-dealer at prices ranging from \$3.50 to \$3.515. 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.
4. This number does not include 1,831,454 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 7,900,369 shares of common stock.

Remarks:

/s/ Keith Murphy 01/25/2017  
\*\* 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.