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FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

OMB APPROVAL

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

| | | | 2. Issuer Name and Ticker or Trading Symbol ORGANOVO HOLDINGS, INC. [ONVO] | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) | | | | | |
|-----------------------------------|---------|----------|---|--|--|-----------------------|--|--|--|
| <u></u> | | | | | Director | 10% Owner | | | |
| (Last) | (First) | (Middle) | 3. Date of Earliest Transaction (Month/Day/Year) | X | Officer (give title below) | Other (specify below) | | | |
| 6275 NANCY RIDGE DRIVE, SUITE 110 | | | 11/13/2013 | | Chairman, CEO and President | | | | |
| (Street) | | | 4. If Amendment, Date of Original Filed (Month/Day/Year) | 6. Indiv Line) | ridual or Joint/Group Filin | g (Check Applicable | | | |
| SAN DIEGO | CA | 92121 | | X | Form filed by One Rep Form filed by More that | 0 | | | |
| (City) | (State) | (Zip) | | | 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) | tion Date, Transaction Code (Instr. | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) | | | Securities Beneficially | 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 | Transaction(s) (Instr. 3 and 4) | | (1130.4) |
| Common Stock | 11/13/2013 | | S ⁽¹⁾ | | 100,000 | D | \$9.6383 ⁽²⁾ | 6,301,748 ⁽³⁾ | 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. Transa Code (8) | | | | 6. Date Exerc Expiration Da (Month/Day/Y | 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 | | | | |

Explanation of Responses:

1. The sale of shares was effecutated 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 \$9.50 to \$9.95. 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.
This number does not include 294,344 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 6,626,092 shares of common stock.

<u>/s/ Keith Murphy</u>

<u>11/15/2013</u> porting Person Date

** Signature of Reporting Person

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.