

ARCA biopharma, Inc.  
Form 4  
March 31, 2010

**FORM 4**

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

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).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
Atlas Venture Fund VII L P

(Last) (First) (Middle)

C/O ATLAS VENTUR, 890  
WINTER STREET, SUITE 320

(Street)

WALTHAM, MA 02451

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol  
ARCA biopharma, Inc. [ABIO]

3. Date of Earliest Transaction  
(Month/Day/Year)  
03/29/2010

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

\_\_\_ Director \_\_\_X\_ 10% Owner  
\_\_\_ Officer (give title below) \_\_\_ Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)  
\_X\_ Form filed by One Reporting Person  
\_\_\_ 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 Ownership (Instr. 4)
				(A) or (D)	Price		
Common Stock	03/29/2010		S	V	Amount \$ 140,000	D	7.56
							1,337,612 (1) D

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

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

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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 Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Owned Following Reporting Transaction (Instr. 6)
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## Reporting Owners

Reporting Owner Name / Address	Relationships				Date Exercisable	Expiration Date	Title	Amount or Number of Shares
	Director	10% Owner	Officer	Other				
Atlas Venture Fund VII L P C/O ATLAS VENTUR 890 WINTER STREET, SUITE 320 WALTHAM, MA 02451			X					

## Signatures

Atlas Venture Fund VII, L.P. By: Atlas Venture Associates VII, L.P. Its General Partner Atlas Venture Fund VII, L.P. By: Atlas Venture Associates VII, L.P. Its General Partner /s/ Kristen Laguerre, Vice President							03/31/2010
	**Signature of Reporting Person						Date
Atlas Venture Associates VII, L.P. By: Atlas Venture Associates VII, Inc. Its General Partner /s/ Kristen Laguerre, Vice President							03/31/2010
	**Signature of Reporting Person						Date

## Explanation of Responses:

- \* 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).
- (1) Represents 1,262,163 shares of Common Stock and 75,449 warrants to purchase shares of Common Stock held by Atlas Venture Fund VII, L.P. These shares are held directly by AV VII. Atlas Venture Associates VII, L.P., or AVA VII LP, is the sole general partner of AV VII. Each of Atlas VII and AVA VII LP disclaims beneficial ownership of such shares except to the extent of it's pecuniary interest therein.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.