

INFINITY PHARMACEUTICALS, INC.  
 Form 4  
 September 13, 2006

**FORM 4** UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
 Washington, D.C. 20549

OMB APPROVAL

OMB Number: 3235-0287  
 Expires: January 31, 2005  
 Estimated average burden hours per response... 0.5

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 \*  
 Burke Thomas Joseph

2. Issuer Name and Ticker or Trading Symbol  
 INFINITY PHARMACEUTICALS, INC. [INFI]

5. Relationship of Reporting Person(s) to Issuer  
 (Check all applicable)  
 \_\_\_ Director \_\_\_ 10% Owner  
 Officer (give title below) \_\_\_ Other (specify below)  
 Assistant Treasurer

(Last) (First) (Middle)  
 C/O INFINITY PHARMACEUTICALS, INC., 780 MEMORIAL DRIVE  
 (Street)

3. Date of Earliest Transaction (Month/Day/Year)  
 09/12/2006

CAMBRIDGE, MA 02139

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

6. Individual or Joint/Group Filing(Check Applicable Line)  
 Form filed by One Reporting Person  
 \_\_\_ Form filed by More than One Reporting Person

(City) (State) (Zip)

**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)
Common Stock	09/12/2006		A	(A) or (D)	10,306 (1) A (2) 10,306 (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. Title and Amount of Underlying Securities (Instr. 3 and 4)			
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares
Stock Option (Right to Buy)	\$ 1.72 <sup>(3)</sup>	09/12/2006		A	5,525 <sub>(1)</sub>	<sup>(4)</sup>		05/05/2013		Common Stock	5,525 <sub>(1)</sub>
Stock Option (Right to Buy)	\$ 1.72 <sup>(3)</sup>	09/12/2006		A	1,621 <sub>(1)</sub>	<sup>(6)</sup>		03/25/2014		Common Stock	1,621 <sub>(1)</sub>
Stock Option (Right to Buy)	\$ 2.04 <sup>(3)</sup>	09/12/2006		A	5,640 <sub>(1)</sub>	<sup>(8)</sup>		05/10/2015		Common Stock	5,640 <sub>(1)</sub>
Stock Option (Right to Buy)	\$ 2.04 <sup>(3)</sup>	09/12/2006		A	5,640 <sub>(1)</sub>	<sup>(10)</sup>		05/10/2015		Common Stock	5,640 <sub>(1)</sub>
Stock Option (Right to Buy)	\$ 2.04 <sup>(3)</sup>	09/12/2006		A	2,210 <sub>(1)</sub>	<sup>(10)</sup>		06/07/2015		Common Stock	2,210 <sub>(1)</sub>
Stock Option (Right to Buy)	\$ 3.48 <sup>(3)</sup>	09/12/2006		A	2,431 <sub>(1)</sub>	<sup>(12)</sup>		03/31/2016		Common Stock	2,431 <sub>(1)</sub>
Stock Option (Right to Buy)	\$ 3.48 <sup>(3)</sup>	09/12/2006		A	331 <sub>(1)</sub>	<sup>(14)</sup>		03/31/2016		Common Stock	331 <sub>(1)</sub>

## Reporting Owners

Reporting Owner Name / Address

Relationships

Director 10% Owner Officer Other

Burke Thomas Joseph  
C/O INFINITY PHARMACEUTICALS, INC.  
780 MEMORIAL DRIVE  
CAMBRIDGE, MA 02139

Assistant Treasurer

## Signatures

/s/ Thomas Joseph  
Burke

09/13/2006

\_\_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) Reflects a 1-for-4 reverse stock split, which became effective on September 12, 2006.
- (2) Received in exchange for 46,628 shares of Infinity Discovery, Inc. ("IPI") common stock in connection with the merger of IPI into Infinity Pharmaceuticals, Inc. (the "Merger") based a conversion ratio of 0.88411.
- (3) The exercise price reflects the exercise price of each option to purchase IPI common stock prior to the closing of the Merger divided by a conversion ratio of 0.88411, as adjusted to reflect the 1-for-4 reverse stock split.
- (4) The option vests monthly in equal installments for four years, beginning on January 31, 2003.
- (5) Received in the Merger in exchange for stock option to acquire 25,000 shares of IPI common stock for \$0.38 per share based on a conversion ratio of 0.88411.
- (6) The option vests monthly in equal installments for four years, beginning on January 31, 2004.
- (7) Received in the Merger in exchange for stock option to acquire 7,336 shares of IPI common stock for \$0.38 per share based on a conversion ratio of 0.88411.
- (8) The option vests monthly in equal installments for six years, beginning on January 31, 2005.
- (9) Received in the Merger in exchange for stock option to acquire 25,518 shares of IPI common stock for \$0.45 per share based on a conversion ratio of 0.88411.
- (10) The option vests monthly in equal installments for four years, beginning on January 31, 2005.
- (11) Received in the Merger in exchange for stock option to acquire 10,000 shares of IPI common stock for \$0.45 per share based on a conversion ratio of 0.88411.
- (12) The option vests monthly in equal installments for four years, beginning on February 1, 2006.
- (13) Received in the Merger in exchange for stock option to acquire 11,000 shares of IPI common stock for \$0.77 per share based on a conversion ratio of 0.88411.
- (14) The option vests monthly in equal installments for one year, beginning on February 1, 2006.
- (15) Received in the Merger in exchange for stock option to acquire 1,500 shares of IPI common stock for \$0.77 per share based on a conversion ratio of 0.88411.

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.