

INFINITY PHARMACEUTICALS, INC.  
 Form 4  
 September 13, 2006

**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 \*  
 Holtzman Steven H

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)  
 CEO and Assistant Secretary

(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 Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount or Price		
Common Stock	09/12/2006		A		211,091 <sup>(1)</sup>	A	(2) 211,091 <sup>(1)</sup> D
Common Stock	09/12/2006		A		18,729 <sup>(1)</sup>	A	(3) 18,729 <sup>(1)</sup> D
Common Stock	09/12/2006		A		177,364 <sup>(1)</sup> <sup>(4)</sup>	A	(5) 177,364 <sup>(1)</sup> I

By  
 Holtzman-Stewart  
 1996 Irrevocable  
 Trust

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

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(9-02)

**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 Underlying Securities (Instr. 3 and 4)	8. Amount or Number of Shares
Stock Option (right to buy)	\$ 2.04 <sup>(12)</sup>	09/12/2006		A	55,256 <sup>(1)</sup>	<sup>(6)</sup> 05/10/2015	Common Stock	55,256 <sup>(1)</sup>
Stock Option (right to buy)	\$ 3.48 <sup>(12)</sup>	09/12/2006		A	331 <sup>(1)</sup>	<sup>(8)</sup> 03/31/2016	Common Stock	331 <sup>(1)</sup>
Stock Option (right to buy)	\$ 3.48 <sup>(12)</sup>	09/12/2006		A	33,154 <sup>(1)</sup>	<sup>(10)</sup> 03/31/2016	Common Stock	33,154 <sup>(1)</sup>

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Holtzman Steven H C/O INFINITY PHARMACEUTICALS, INC. 780 MEMORIAL DRIVE CAMBRIDGE, MA 02139	X		CEO and Assistant Secretary	

## Signatures

/s/ Steven H. Holtzman 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 955,046 shares of Infinity Discovery, Inc. ("IPI") common stock in connection with the merger of IPI into Infinity Pharmaceuticals, Inc. (the "Merger") based on a conversion ratio of 0.88411.
- (3) Received in exchange for 66,667 shares of IPI Series B Preferred Stock in connection with the Merger based on a conversion ratio of 1.12375. The Series B Preferred Stock had no expiration date.
- (4) The reporting person disclaims beneficial ownership of the reported securities except to the extent of his pecuniary interest therein.
- (5) Received in exchange for 802,454 shares of IPI common stock in connection with the Merger based on a conversion ratio of 0.88411.
- (6) The option vests annually in equal installments for four years, beginning on January 31, 2005.
- (7) Received in the Merger in exchange for a stock option to acquire 250,000 shares of IPI common stock for \$0.45 per share based on a conversion ratio of 0.88411.
- (8) The option vests in equal monthly installments for 1 year, beginning on February 1, 2006.
- (9) Received in the Merger in exchange for a stock option to acquire 1,500 shares of IPI common stock for \$0.77 per share based on a conversion ratio of 0.88411.
- (10) The options vest annually in equal installments for four years, beginning on February 1, 2006.
- (11) Received in the Merger in exchange for stock options to acquire 150,000 shares of IPI common stock for \$0.77 per share based on a conversion ratio of 0.88411.
- (12) 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.

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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