

INFINITY PHARMACEUTICALS, INC.  
 Form 3  
 September 22, 2006

**FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

OMB APPROVAL

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**INITIAL STATEMENT OF 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)

<p>1. Name and Address of Reporting Person *</p> <p>Â BARKAS ALEXANDER E</p> <p>(Last) (First) (Middle)</p> <p>C/O PROSPECT VENTURE PARTNERS,Â 435 TASSO STREET, SUITE 200</p> <p>(Street)</p> <p>PALO ALTO,Â CAÂ 94301</p> <p>(City) (State) (Zip)</p>	<p>2. Date of Event Requiring Statement</p> <p>(Month/Day/Year)</p> <p>09/12/2006</p>	<p>3. Issuer Name and Ticker or Trading Symbol</p> <p>INFINITY PHARMACEUTICALS, INC. [INFI]</p>	<p>4. Relationship of Reporting Person(s) to Issuer</p> <p>(Check all applicable)</p> <p>____ Director    <input checked="" type="checkbox"/> 10% Owner          ____ Officer    ____ Other          (give title below) (specify below)</p>	<p>5. If Amendment, Date Original Filed(Month/Day/Year)</p>	<p>6. Individual or Joint/Group Filing(Check Applicable Line)</p> <p><input checked="" type="checkbox"/> Form filed by One Reporting Person</p> <p>____ Form filed by More than One Reporting Person</p>
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**Table I - Non-Derivative Securities Beneficially Owned**

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
Common Stock	107,750 <u>(1)</u> <u>(8)</u>	I	By Prospect Venture Partners II, L.P. <u>(2)</u>
Common Stock	510,575 <u>(1)</u> <u>(9)</u>	I	By Prospect Venture Partners II, L.P. <u>(3)</u>
Common Stock	799,152 <u>(1)</u> <u>(10)</u>	I	By Prospect Venture Partners II, L.P. <u>(4)</u>
Common Stock	107,750 <u>(1)</u> <u>(11)</u>	I	By Prospect Venture Partners, L.P. <u>(5)</u>
Common Stock	510,575 <u>(1)</u> <u>(12)</u>	I	By Prospect Venture Partners, L.P. <u>(6)</u>
Common Stock	66,596 <u>(1)</u> <u>(13)</u>	I	By Prospect Venture Partners, L.P. <u>(7)</u>

Common Stock 26,938 <sup>(1)</sup> <sup>(14)</sup> D Â

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly. SEC 1473 (7-02)

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

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)	3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)	4. Conversion or Exercise Price of Derivative Security	5. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares	

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
BARKAS ALEXANDER E C/O PROSPECT VENTURE PARTNERS 435 TASSO STREET, SUITE 200 PALO ALTO, CA 94301	Â	Â X	Â	Â

## Signatures

/s/ Alexander E. Barkas, 09/22/2006  
Ph.D.

\*\*Signature of Reporting Person Date

## Explanation of Responses:

- \* If the form is filed by more than one reporting person, see Instruction 5(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 1:4 reverse stock split, which became effective September 12, 2006.  
The shares are owned by Prospect Venture Partners II, L.P. ("PVP II"). Prospect Management Co. II, L.L.C. ("PMC II") serves as the sole general partner of PVP II. James B. Tananbaum, M.D., Alexander E. Barkas, Ph.D., David Schnell, M.D., and Russell C. Hirsch, M.D., Ph.D. are the Managing Directors of PMC II. Each reporting person disclaims beneficial ownership of the shares reported herein, except to the extent of its pecuniary interest. Dr. Tananbaum, Dr. Barkas and Dr. Schnell have filed separate Section 16 reports relating to their holdings in the Issuer.
- (3) The shares are owned by PVP II.
- (4) The shares are owned by PVP II.  
The shares are owned by Prospect Venture Partners, L.P. ("PVP"). Prospect Management Co., L.L.C. ("PMC") serves as the sole general partner of PVP. Dr. Barkas and Dr. Schnell are the Managing Directors of PMC. Each reporting person disclaims beneficial ownership of the shares reported herein, except to the extent of its pecuniary interest.
- (6) The shares are owned by PVP.

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- (7) The shares are owned by PVP.
- (8) Received in exchange for 487,500 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.
- (9) Received in exchange for 2,600,000 shares of IPI Series A Preferred Stock in connection with the Merger based on a conversion ratio of 0.78550. The Series A Preferred Stock had no expiration date.
- (10) Received in exchange for 3,200,000 shares of IPI Series B Preferred Stock in connection with the Merger based on a conversion ratio of 0.99894. The Series B Preferred Stock had no expiration date.
- (11) Received in exchange for 487,500 shares of IPI Common Stock in connection with the Merger based on a conversion ratio of 0.88411.
- (12) Received in exchange for 2,600,000 shares of IPI Series A Preferred Stock in connection with the Merger based on a conversion ratio of 0.78550. The Series A Preferred Stock had no expiration date.
- (13) Received in exchange for 266,667 shares of IPI Series B Preferred Stock in connection with the Merger based on a conversion ratio of 0.99894. The Series B Preferred Stock had no expiration date.
- (14) Received in exchange for 121,875 shares of IPI Common Stock in connection with the Merger 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.

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