

Santabarbara Pedro  
 Form 3  
 December 13, 2010

**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)

1. Name and Address of Reporting Person \*

Â Santabarbara Pedro  
 (Last) (First) (Middle)

2. Date of Event Requiring Statement

(Month/Day/Year)  
 12/10/2010

3. Issuer Name and Ticker or Trading Symbol

INFINITY PHARMACEUTICALS, INC. [INFI]

4. Relationship of Reporting Person(s) to Issuer

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

(Check all applicable)

Director  10% Owner  
 Officer  Other  
 (give title below) (specify below)  
 Chief Medical Officer

C/O INFINITY  
 PHARMACEUTICALS,  
 INC.,Â 780 MEMORIAL  
 DRIVE

(Street)

CAMBRIDGE,Â MAÂ 02139

(City) (State) (Zip)

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

**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)

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

SEC 1473 (7-02)

**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 control number.**

**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

5. Ownership Form of Derivative Security:

6. Nature of Indirect Beneficial Ownership (Instr. 5)

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|                             | Date Exercisable | Expiration Date | Title        | Amount or Number of Shares | Security | Direct (D) or Indirect (I) (Instr. 5) |
|-----------------------------|------------------|-----------------|--------------|----------------------------|----------|---------------------------------------|
| Stock Option (Right to Buy) | 11/04/2020       | 11/04/2020      | Common Stock | 160,000                    | \$ 6.5   | D                                     |

## Reporting Owners

| Reporting Owner Name / Address  | Relationships |           |                       |       |
|---|---------------|-----------|-----------------------|-------|
|   | Director      | 10% Owner | Officer               | Other |
| Santabarbara Pedro<br>C/O INFINITY PHARMACEUTICALS, INC.<br>780 MEMORIAL DRIVE<br>CAMBRIDGE, MA 02139 |               |           | Chief Medical Officer |       |

## Signatures

/s/ Pedro  
Santabarbara

12/10/2010

\*\*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) The option vests as to one quarter of the shares on November 1, 2011 and as to the remaining shares in 36 equal monthly installments thereafter.

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.