

INFINITY PHARMACEUTICALS, INC.

Form S-3

December 22, 2006

Table of Contents

As filed with the Securities and Exchange Commission on December 22, 2006

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3
REGISTRATION STATEMENT

UNDER
THE SECURITIES ACT OF 1933

INFINITY PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

33-0655706
(I.R.S. Employer

Identification Number)

780 Memorial Drive

Cambridge, Massachusetts 02139

(617) 453-1000

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Gerald E. Quirk, Esq.

Vice President and General Counsel

Infinity Pharmaceuticals, Inc.

780 Memorial Drive

Cambridge, Massachusetts 02139

(617) 453-1000

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Steven D. Singer, Esq.

Wilmer Cutler Pickering

Hale and Dorr LLP

60 State Street

Boston, Massachusetts 02109

Telephone: (617) 526-6000

Telecopy: (617) 526-5000

Approximate date of commencement of proposed sale to public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, or the Securities Act, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. _____

Table of Contents

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. " _____

If this form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. " _____

If this form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. " _____

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered (1)	Proposed Maximum Aggregate Offering Price (2) (3)	Amount of Registration Fee (4)
Common Stock, par value \$0.001 per share (5)(6)	(7)	(7)
Preferred Stock, par value \$0.001 per share	(7)	(7)
Debt Securities	(7)	(7)
Warrants	(7)	(7)
Total:	\$ 150,000,000	\$ 16,050

- (1) There are being registered hereunder such indeterminate number of shares of common stock, such indeterminate number of shares of preferred stock, such indeterminate principal amount of debt securities and such indeterminate number of warrants to purchase common stock, preferred stock or debt securities, as will have an aggregate initial offering price not to exceed \$150,000,000. If any debt securities are issued at an original issue discount, then the offering price of such debt securities shall be in such greater principal amount as shall result in an aggregate initial offering price not to exceed \$150,000,000, less the aggregate dollar amount of all securities previously issued hereunder. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. The securities registered also include such indeterminate amounts and numbers of shares of common stock and numbers of shares of preferred stock, and principal amounts of debt securities, as may be issued upon conversion of or exchange for preferred stock or debt securities that provide for conversion or exchange, upon exercise of warrants or pursuant to the anti-dilution provisions of any such securities.
- (2) In United States dollars or the equivalent thereof in any other currency, currency unit or units, or composite currency or currencies.
- (3) The proposed maximum per unit and aggregate offering prices per class of security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered under this registration statement.
- (4) Estimated solely for purposes of determining the registration fee pursuant to Rule 457(o) under the Securities Act.
- (5) The aggregate amount of common stock registered under this registration statement is limited, with respect to at the market offerings, to that which is permissible under Rule 415(a)(4) under the Securities Act.
- (6) The common stock includes associated Series A Junior Participating Preferred Stock Rights pursuant to the Rights Agreement between the Registrant and American Stock Transfer & Trust Company dated February 13, 2003, as amended on April 11, 2006.
- (7) Not required to be included in accordance with General Instruction II.D. of Form S-3.

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

Table of Contents

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated December 22, 2006

\$150,000,000

INFINITY PHARMACEUTICALS, INC.

Common Stock

Preferred Stock

Debt Securities

Warrants

We may from time to time sell common stock, preferred stock, debt securities or warrants, or any combination of these securities, in one or more offerings up to a total dollar amount of \$150,000,000. We may sell these securities to or through underwriters, directly to investors or through agents. We will specify the terms of the securities, and the names of any underwriters or agents, in supplements to this prospectus.

Our common stock is listed on the NASDAQ Global Market and traded under the symbol INFI. The last reported sale price of our common stock on the NASDAQ Global Market on December 21, 2006 was \$12.00 per share.

Investing in our securities involves significant risks. See **Risk Factors** on page 4.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

This prospectus may not be used to consummate sales of securities unless it is accompanied by a prospectus supplement.

Prospectus dated _____, 2006.

Table of Contents

TABLE OF CONTENTS

<u>About this Prospectus</u>	1
<u>Summary</u>	2
<u>Risk Factors</u>	4
<u>Special Note Regarding Forward-Looking Statements</u>	4
<u>Use of Proceeds</u>	5
<u>Deficiency of Earnings to Fixed Charges</u>	5
<u>Dilution</u>	5
<u>The Securities We May Offer</u>	6
<u>Description of Capital Stock</u>	7
<u>Description of Debt Securities</u>	13
<u>Description of Warrants</u>	18
<u>Legal Ownership of Securities</u>	20
<u>Plan of Distribution</u>	23
<u>Legal Matters</u>	25
<u>Experts</u>	25
<u>Where You Can Find More Information</u>	25
<u>Incorporation of Certain Information by Reference</u>	25

You should rely only on the information contained in this prospectus and the documents incorporated by reference in this prospectus or to which we have referred you. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus does not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation of an offer in such jurisdiction. You should not assume that the information contained in this prospectus or any document incorporated by reference is accurate as of any date other than the date on the front cover of the applicable document. Neither the delivery of this prospectus nor any distribution of securities pursuant to this prospectus shall, under any circumstances, create any implication that there has been no change in the information set forth or incorporated by reference into this prospectus or in our affairs since the date of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a shelf registration process. Under this shelf registration process, we may from time to time sell common stock, preferred stock, debt securities or warrants, or any combination of these securities, in one or more offerings up to a total dollar amount of \$150,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities under this shelf registration process, we will provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in the prospectus supplement or any free writing prospectus we may authorize to be delivered to you any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement or any free writing prospectus we may authorize to be delivered to you, you should rely on the information in the prospectus supplement or free writing prospectus, as the case may be, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date for example, a document incorporated by reference in this prospectus or any prospectus supplement the statement in the document having the later date modifies or supersedes the earlier statement. This prospectus, together with the applicable prospectus supplements and any free writing prospectus we may authorize to be delivered to you, includes all material information relating to this offering.

As permitted by the rules and regulations of the SEC, the registration statement, of which this prospectus forms a part, includes additional information not contained in this prospectus. You may read the registration statement and the other reports we file with the SEC at the SEC's web site or at the SEC's offices described below under the heading Where You Can Find Additional Information.

Table of Contents

SUMMARY

Infinity Pharmaceuticals, Inc.

Our mission is to discover, develop, and deliver to patients medicines for the treatment of cancer and related conditions. We have built a pipeline of innovative product candidates for multiple cancer indications, all of which represent proprietary applications of our expertise in small molecule drug technologies. In the near term, the key driver of our success will be our ability to successfully commence and complete clinical trials for our product candidates and advance the development of our discovery-stage research programs. In the longer term, the key driver of our success will be our ability to commercialize products based upon our proprietary technologies, either alone or in collaboration with our collaboration partners.

Our lead product candidate, IPI-504, is an inhibitor of Heat Shock Protein 90, or Hsp90, which is known to stabilize proteins expressed by cancer-causing genes that are critical to cancer cell proliferation and survival. Stabilization of these proteins allows cancer cells to evade apoptosis, the body's normal mechanism of programmed cell death, in which cells commit suicide when their continued existence might otherwise be harmful to the organism. IPI-504 is currently being studied in two Phase I clinical trials. Both trials are disease-focused and are targeting cancers that are refractory, or resistant, to other treatments. The first clinical trial is evaluating IPI-504 in patients who have multiple myeloma; the second is evaluating the compound in patients who have gastrointestinal stromal tumors. We currently expect to begin a Phase II clinical trial of IPI-504 and to commence Phase I clinical development of an oral formulation of IPI-504 during 2007. Our next most advanced product program is directed against the Hedgehog pathway, which has been implicated in many aggressive cancers, including certain cancers of the pancreas, prostate, lung, breast and brain. Normally, the Hedgehog pathway regulates tissue and organ formation during embryonic development. When abnormally activated during adulthood, however, the Hedgehog signaling pathway is believed to play a central role in allowing the proliferation and survival of certain cancer-causing cells. Both of these programs are being pursued in collaboration with MedImmune, Inc.

The goal of our third program, which is in the discovery stage of research, and is being undertaken in collaboration with the Novartis Institutes for BioMedical Research, is to identify inhibitors of the Bcl-2/Bcl-xL family of proteins. Bcl-2 and its related protein Bcl-xL act as brakes on programmed cell death and are key regulators of apoptosis. Many cancer cells have higher than normal levels of Bcl-2 and Bcl-xL. This allows them to evade apoptosis and, for example, become resistant to chemotherapy. We are seeking to develop compounds for a broad range of cancers that target Bcl-2/Bcl-xL to inhibit its effect on cells.

We also have other development programs in the discovery research stage that target cancer, hyperproliferative disorders and related conditions.

Corporate Information

We were incorporated in California on March 22, 1995 under the name IRORI, and, in 1998, changed our name to Discovery Partners International, Inc., or DPI. In July 2000, we reincorporated in Delaware. On September 12, 2006, DPI completed a merger with Infinity Pharmaceuticals, Inc., or IPI, pursuant to which a wholly-owned subsidiary of DPI merged with and into IPI. IPI was the surviving corporation in the merger, changed its name to Infinity Discovery, Inc., or Old Infinity, and became a wholly owned subsidiary of DPI. In addition, we changed our corporate name to Infinity Pharmaceuticals, Inc., or Infinity, and our ticker symbol on the NASDAQ Global Market was changed to INFI.

Upon completion of the merger, approximately 12.8 million shares of Infinity common stock were issued to Old Infinity stockholders, and Infinity assumed all of the stock options, stock warrants and restricted stock of Old Infinity outstanding as of September 12, 2006, which total approximately 1.6 million shares of Infinity common stock. As a result of the merger, former Old Infinity stockholders, option holders and warrant holders owned, as of the closing, approximately 69% of the combined company on a fully-diluted basis and former DPI stockholders, option holders and warrant holders owned, as of the closing, approximately 31% of the combined company on a fully-diluted basis. Following completion of the merger, the business conducted by Infinity became the one operated by Old Infinity prior to completion of the merger.

Table of Contents

Since former Old Infinity security holders owned, immediately following the merger, approximately 69% of the combined company on a fully-diluted basis and as a result of certain other factors, including that former Old Infinity directors constituted a majority of the combined company's board of directors and all members of the combined company's executive management were from Old Infinity, Old Infinity was deemed to be the acquiring company for accounting purposes and the transaction was accounted for as a reverse acquisition of assets and a recapitalization in accordance with accounting principles generally accepted in the United States. Accordingly, for all purposes, including SEC reporting, our financial statements for periods prior to the merger reflect the historical results of Old Infinity, and not DPI, and our financial statements for all subsequent periods reflect the results of the combined company.

Our principal executive offices are located at 780 Memorial Drive, Cambridge, Massachusetts 02139 and our telephone number at that address is (617) 453-1000. Our website is www.ipi.com. The information on our website is not incorporated by reference into this prospectus or any prospectus supplement and should not be considered to be a part of the prospectus or any prospectus supplement. We have included our website address as an inactive textual reference only.

Unless otherwise stated, all references to us, our, Infinity, we, the Company and similar designations refer to the combined company, which now known as Infinity Pharmaceuticals, Inc., and subsidiaries. The Infinity logos and all other Infinity product and service names, are registered trademarks or trademarks of Infinity or its subsidiaries in the United States and in other select countries. ® and indicate U.S. registration and U.S. trademark, respectively. Other third-party logos and product/trade names are registered trademarks or trade names of their respective companies.

Table of Contents

RISK FACTORS

Investing in our securities involves significant risks. Please see the risk factors under the heading "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2006 on file with the SEC, which are incorporated by reference in this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus and any prospectus supplement. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents we incorporate by reference in this prospectus include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, which we refer to as the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act. For purposes of these statutes, any statement contained herein or therein, other than a statement of historical fact, may be a forward-looking statement. For example, we may, in some cases, use words such as anticipate, believe, could, estimate, expect, intend, may, plan, project, should, will, would convey uncertainty of future events or outcomes to identify these forward-looking statements. Our actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including the factors referred to above under the heading "Risk Factors." These important factors include the factors that we identify in the documents that we incorporate by reference in this prospectus. If one or more of these factors materialize, or if any underlying assumptions prove incorrect, our actual results, performance or achievements may vary materially from any future results, performance or achievements expressed or implied by these forward-looking statements. You should consider these factors and the other cautionary statements made in this prospectus, any prospectus supplement or the documents we incorporate by reference in this prospectus as being applicable to all related forward-looking statements wherever they appear in this prospectus, any prospectus supplement or the documents incorporated by reference. While we may elect to update forward-looking statements wherever they appear in this prospectus, any prospectus supplement or the documents incorporated by reference, we do not assume, and specifically disclaim, any obligation to do so, whether as a result of new information, future events or otherwise.

Table of Contents**USE OF PROCEEDS**

Unless otherwise provided in the applicable prospectus supplement, we currently intend to use the net proceeds from the sale of the securities under this prospectus for general corporate purposes, research and development expenses, including clinical trial costs, general and administrative expenses, and potential acquisition of, or investment in, companies, technologies, products or assets that complement our business. We will set forth in a prospectus supplement relating to a specific offering our intended use for the net proceeds received from the sale of securities in that offering. Pending the application of the net proceeds, we intend to invest the net proceeds in short-term investment grade and U.S. government securities.

DEFICIENCY OF EARNINGS TO FIXED CHARGES

As described above, on September 12, 2006, DPI completed a merger with Old Infinity. Since former Old Infinity security holders owned, immediately after the merger, approximately 69% of the combined company on a fully-diluted basis and as a result of certain other factors, including that former Old Infinity directors constituted a majority of the combined company's board of directors and all members of the combined company's executive management were from Old Infinity, Old Infinity was deemed to be the acquiring company for accounting purposes and the transaction was accounted for as a reverse acquisition of assets and a recapitalization in accordance with accounting principles generally accepted in the United States. Accordingly, following completion of the merger, our financial statements for periods prior to the merger reflect the historical results of Old Infinity, and not DPI, and our financial statements for all subsequent periods reflect the results of the combined company.

Based on our post-merger financial statements, we did not record earnings for any of the years ended December 31, 2005, 2004, 2003, 2002 or 2001 or for the nine-month period ended September 30, 2006. Accordingly, our earnings were insufficient to cover fixed charges in such periods and we are unable to disclose a ratio of earnings to fixed charges. The following table sets forth, for each of the periods presented, the dollar amount of the deficiency of earnings available to cover fixed charges. For purposes of computing the deficiency of earnings available to cover fixed charges, fixed charges represent interest expense and an estimate of the interest expense within rental expense.

	Nine Months Ended		Year Ended December 31,			
	September 30,					
	2006	2005	2004	2003	2002	2001
	(amounts in thousands)					
Coverage deficiency	\$ 23,024	\$ 36,369	\$ 34,088	\$ 33,850	\$ 19,626	\$ 2,924

As of the date of this prospectus, we have no shares of preferred stock outstanding and have not declared or paid any preferred stock dividends for the periods set forth above.

DILUTION

We will set forth in any prospectus supplement the following information regarding any material dilution of the equity interests of investors purchasing securities in an offering under this prospectus:

the net tangible book value per share of our equity securities before and after the offering;

the amount of the increase in such net tangible book value per share attributable to the cash payments made by the purchasers in the offering; and

the amount of the immediate dilution from the public offering price which will be absorbed by such purchasers.

Table of Contents

THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material U.S. federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings:

common stock;

preferred stock;

debt securities;

warrants to purchase any of the securities listed above; and

any combination of the foregoing securities.

In this prospectus, we will refer to the common stock, preferred stock, debt securities and warrants collectively as securities. The total dollar amount of all securities that we may issue under this prospectus will not exceed \$150,000,000.

If we issue debt securities at a discount from their original stated principal amount, then, for purposes of calculating the total dollar amount of all securities issued under this prospectus, we will treat the initial offering price of the debt securities as the total original principal amount of the debt securities.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

Table of Contents

DESCRIPTION OF CAPITAL STOCK

The following description of our common stock and preferred stock, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the common stock and preferred stock that we may offer under this prospectus. For the complete terms of our common stock and preferred stock, please refer to our certificate of incorporation and bylaws, which are incorporated by reference into the registration statement, of which this prospectus forms a part. The terms of our common stock and preferred stock may also be affected by Delaware law.

Authorized Capital Stock

Our authorized capital stock consists of 100,000,000 shares of common stock, \$0.001 par value per share, and 1,000,000 shares of preferred stock, \$0.001 par value per share. As of November 30, 2006, we had 19,491,921 shares of common stock outstanding and no shares of preferred stock outstanding. All of our outstanding shares of common stock are duly authorized, validly issued, fully paid and non-assessable.

Common Stock

Dividend Rights

Subject to prior rights and preferences, if any, that may apply to shares of preferred stock outstanding at the time, the holders of outstanding shares of our common stock are entitled to receive dividends, payable in cash, property or stock, out of assets legally available at the times and in the amounts as our board of directors may from time to time determine.

Voting Rights

Each share of our common stock has identical rights and privileges in every respect. Each holder of common stock is entitled to one vote for each share of common stock held on all matters submitted to a vote of stockholders. Our common stock does not have cumulative voting rights. Any election of directors by our stockholders is determined by a plurality of the votes cast by the stockholders.

No Preemptive or Similar Rights

Holders of our common stock are not entitled to preemptive rights and our common stock is not subject to conversion or redemption.

Liquidation and Dissolution

If we voluntarily or involuntarily liquidate, dissolve or wind-up, the holders of our common stock will be entitled to receive after distribution in full of the preferential amounts, if any, to be distributed to the holders of preferred stock or any series of preferred stock, all of the remaining assets available for distribution ratably in proportion to the number of shares of common stock held by them.

Other Rights and Restrictions

Holders of our common stock do not have preemptive rights, and they have no right to convert their common stock into any other securities. Our common stock is not subject to redemption by us. Our certificate of incorporation and by-laws do not restrict the ability of a holder of common stock to transfer his or her shares of common stock. When we issue shares of common stock under this prospectus, the shares will be fully paid and non-assessable and will not have, or be subject to, any preemptive or similar rights.

Table of Contents

Transfer Agent

The transfer agent for our common stock is American Stock Transfer & Trust Company.

Listing

Our common stock is listed on the NASDAQ Global Market under the symbol INFI. On December 21, 2006, the last reported sale price for our common stock on the NASDAQ Global Market was \$12.00 per share. As of November 30, 2006, we had approximately 121 stockholders of record.

Preferred Stock

Our board of directors is authorized to provide for the issuance of shares of preferred stock in one or more series, and to fix for each series voting rights, if any, designations, preferences and relative, participating, optional or other special rights and such qualifications, limitations or restrictions as provided in a resolution or resolutions adopted by the board of directors. Our board of directors has authorized the issuance of Series A junior participating preferred stock which includes terms and conditions which could discourage a takeover or other transaction that holders of some or a majority of common stock might believe to be in their best interests. In addition, our board of directors may authorize the issuance of preferred stock in which holders of preferred stock might receive a premium for their shares over the then market price.

If we decide to issue any preferred stock pursuant to this prospectus, we will describe in a prospectus supplement the terms of the preferred stock, including, if applicable, the following:

the title of the series and stated value;

the number of shares of the series of preferred stock offered, the liquidation preference per share, if applicable, and the offering price;

the applicable dividend rate(s) or amount(s), period(s) and payment date(s) or method(s) of calculation thereof;

the date from which dividends on the preferred stock will accumulate, if applicable;

any procedures for auction and remarketing;

any provisions for a sinking fund;

any applicable provision for redemption and the price or prices, terms and conditions on which preferred stock may be redeemed;

any securities exchange listing;

any voting rights and powers;

Edgar Filing: INFINITY PHARMACEUTICALS, INC. - Form S-3

whether interests in the preferred stock will be represented by depository shares;

the terms and conditions, if applicable, of conversion into shares of our common stock, including the conversion price or rate or manner of calculation thereof;

a discussion of any material U.S. federal income tax considerations;

the relative ranking and preference as to dividend rights and rights upon our liquidation, dissolution or the winding up of our affairs;

any limitations on issuance of any series of preferred stock ranking senior to or on a parity with such series of preferred stock as to dividend rights and rights upon our liquidation, dissolution or the winding up of our affairs; and

any other specific terms, preferences, rights, limitations or restrictions of such series of preferred stock.

Table of Contents

Series A Junior Participating Preferred Stock

Each outstanding share of our common stock has attached to it one preferred share purchase right that entitles the registered holder to purchase from us a unit of one one-thousandth of a share of our Series A junior participating preferred stock, which is referred to herein as the Junior Preferred Stock, at a price of \$76.00 per unit. The description and terms of the rights are set forth in a rights agreement dated as of February 13, 2003 and amended on April 11, 2006, by and between us and American Stock Transfer & Trust Company, as rights agent, which is referred to herein as the Rights Agreement.

Until the earlier to occur of (i) the close of business on the tenth day after a public announcement that a person or group of affiliated or associated persons has acquired beneficial ownership of 15% or more of our outstanding common stock or (ii) 10 business days (or such later date as may be determined by action of our board of directors prior to such time as any person becomes an acquiring person) following the commencement of, or announcement of an intention to make, a tender offer or exchange offer the consummation of which would result in the beneficial ownership by a person or group of 15% or more of such outstanding common stock (the earlier of such dates is the distribution date), the rights will be evidenced by our common stock certificates.

The Rights Agreement provides that, until the distribution date, the rights will be transferred with and only with our common stock. Until the distribution date (or earlier redemption or expiration of the rights), common stock certificates, upon transfer or new issuance of common stock, will contain a notation incorporating the Rights Agreement by reference. Until the distribution date (or earlier redemption or expiration of the rights), the surrender for transfer of any certificates of our common stock will also constitute the transfer of the rights associated with the common stock represented by such certificate. As soon as practicable following the distribution date, if any, separate certificates evidencing the rights will be mailed to holders of record of our common stock as of the close of business on the distribution date and such separate rights certificates alone will evidence the rights.

The rights are not exercisable until the distribution date. The rights will expire at the close of business on February 24, 2013 unless that final expiration date is extended or unless the rights are earlier redeemed or exchanged by us, in each case as described below.

The purchase price payable, and the number of units of Junior Preferred Stock or other securities or property issuable, upon exercise of the rights are subject to adjustment from time to time to prevent dilution (a) in the event of a stock dividend on, or a subdivision, combination or reclassification of, the Junior Preferred Stock, (b) upon the grant to holders of the units of Junior Preferred Stock of certain rights or warrants to subscribe for or purchase units of Junior Preferred Stock at a price, or securities convertible into units of Junior Preferred Stock with a conversion price, less than the then current market price of the units of Junior Preferred Stock or (c) upon the distribution to holders of the units of Junior Preferred Stock of evidences of indebtedness or assets (excluding regular periodic cash dividends paid out of earnings or retained earnings or dividends payable in units of Junior Preferred Stock) or of subscription rights or warrants other than those referred to above).

The number of outstanding rights and the number of units of Junior Preferred Stock issuable upon exercise of each right are also subject to adjustment in the event of a stock split of our common stock or a stock dividend on the common stock payable in common stock or subdivisions, consolidations or combinations of the common stock occurring, in any such case, prior to the distribution date.

The Junior Preferred Stock purchasable upon exercise of the rights will not be redeemable. Each share of Junior Preferred Stock will be entitled to an aggregate dividend of 1,000 times the dividend declared per share of our common stock. In the event of liquidation, the holders of the shares of Junior Preferred Stock will be entitled to an aggregate payment of 1,000 times the payment made per share of our common stock. Each share of Junior Preferred Stock will have 1,000 votes, voting together with the common stock. Finally, in the event of any merger, consolidation or other transaction in which shares of our common stock are exchanged, each share of Junior Preferred Stock will be entitled to receive 1,000 times the amount received per share of common stock. These rights are protected by customary anti-dilution provisions.

Table of Contents

Because of the nature of the dividend, liquidation and voting rights, the value of each unit of Junior Preferred Stock purchasable upon exercise of each right should approximate the value of one share of common stock.

If, after the rights become exercisable, we are acquired in a merger or other business combination transaction with an acquiring person or one of its affiliates, or 50% or more of our consolidated assets or earning power are sold to an acquiring person or one of its affiliates, proper provision will be made so that each holder of a right will thereafter have the right to receive, upon exercise thereof at the then current exercise price of the right, that number of shares of common stock of the acquiring company which at the time of such transaction will have a market value of two times the exercise price of the right.

If any person or group of affiliated or associated persons becomes the beneficial owner of 15% or more of the outstanding shares of our common stock, proper provision will be made so that each holder of a right, other than rights beneficially owned by the acquiring person (which will thereafter be unexercisable), will have the right to receive upon exercise that number of shares of our common stock or units of Junior Preferred Stock (or cash, other securities or property) having a market value of two times the exercise price of the right.

At any time after the acquisition by a person or group of affiliated or associated persons of beneficial ownership of 15% or more of the outstanding shares of our common stock and prior to the acquisition by such person or group of 50% or more of our outstanding common stock, our board of directors may exchange the rights (other than rights owned by such person or group which have become void), in whole or in part, at a exchange ratio per unit of Junior Preferred Stock equal to the purchase price divided by the then current market price per unit of Junior Preferred Stock on the earlier of (i) the date on which any person becomes an acquiring person and (ii) the date on which a tender or exchange offer is announced which, if consummated would result in the offerer being the beneficial owner of 15% or more of the shares of our common stock then outstanding.

With certain exceptions, no adjustment in the purchase price will be required until cumulative adjustments require an adjustment of at least 1% in the purchase price. No fractional shares of Junior Preferred Stock will be issued (other than fractions which are integral multiples of one one-thousandth of a share of Junior Preferred Stock, which may, at our election, be evidenced by depositary receipts) and, in lieu thereof, an adjustment in cash will be made based on the market price of the units of Junior Preferred Stock on the last trading day prior to the date of exercise.

At any time on or prior to the earlier of (i) the close of business on the tenth day after a public announcement that a person or group of affiliated or associated persons acquires beneficial ownership of 15% or more of our outstanding common stock (unless the board of directors extends the ten day period) or (ii) the tenth business day after a person commences, or announces its intention to commence, a tender offer or exchange offer that would result in the bidder's beneficial ownership of 15% or more of the shares of our common stock, our board of directors may redeem the rights in whole, but not in part, at a price of \$0.01 per right. The redemption of the rights may be made effective at such time, on such basis and with such conditions as the board of directors in its sole discretion may establish. Immediately upon any redemption of the rights, the right to exercise the rights will terminate and the only right of the holders of rights will be to receive the redemption price. The rights are also redeemable under other circumstances as specified in the Rights Agreement.

The terms of the rights may be amended by our board of directors without the consent of the holders of the rights except that from and after such time that there is an acquiring person no amendment may adversely affect the interests of the holders of the rights.

Until a right is exercised, the holder of a right will have no rights by virtue of ownership as a stockholder of Infinity, including, without limitation, the right to vote or to receive dividends.

The rights have certain anti-takeover effects. The rights will cause substantial dilution to a person or group that attempts to acquire us on terms not approved by our board of directors, except pursuant to an offer conditioned on a substantial number of rights being acquired. The rights should not interfere with any merger or other business combination approved by the board of directors since we may redeem the rights at the redemption price prior to the occurrence of a distribution date.

Table of Contents

The Rights Agreement specifying the terms of the rights has been previously filed with the SEC and is incorporated by reference as an exhibit to the registration statement of which this prospectus is a part. The foregoing description of the rights is qualified in its entirety by reference to the Rights Agreement.

Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval, subject to any limitations imposed by the listing standards of The NASDAQ Global Market. We may utilize these additional shares for a variety of corporate purposes, including for future public offerings to raise additional capital or facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved common stock and preferred stock may enable our board of directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a controlling interest in our company by means of a merger, tender offer, proxy contest or otherwise. In addition, if we issue preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation.

Delaware Law and Certificate of Incorporation and Bylaw Provisions

Anti-Takeover Provisions

We are subject to Section 203 of the General Corporation Law of Delaware. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a business combination with any interested stockholder for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A business combination includes, among other things, a merger or consolidation involving us and the interested stockholder and the sale of more than 10% of our assets. In general, an interested stockholder is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person. The restrictions contained in Section 203 are not applicable to any of our existing stockholders.

Staggered Board

Our certificate of incorporation and our bylaws divide our board of directors into three classes with staggered three-year terms. In addition, our certificate of incorporation and our bylaws provide that directors may be removed only for cause and only by the affirmative vote of the holders of 66 2/3% of our shares of capital stock present in person or by proxy and entitled to vote. Under our certificate of incorporation, any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office. The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Stockholder Action; Special Meeting of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our certificate of incorporation and our bylaws provide that any action required or permitted to be taken by our stockholders at an annual meeting or special meeting of stockholders may only be taken if it is properly brought before the meeting and may not be taken by written action in lieu of a meeting. Our certificate of incorporation and our bylaws also provide that, except as otherwise required by law, special meetings of the stockholders can only be called by our chairman of the board, our president or chief executive officer or our board of directors. In addition, our bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including

Table of Contents

proposed nominations of persons for election to the board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of the board of directors or by a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder's intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities.

Limitation of Liability and Indemnification of Officers and Directors

Our certificate of incorporation, as amended, contains provisions permitted under the General Corporation Law of Delaware relating to the liability of directors. The provisions eliminate a director's liability for monetary damages for a breach of fiduciary duty, except in circumstances involving wrongful acts, such as the breach of a director's duty of loyalty or acts or omissions that involve intentional misconduct or a knowing violation of law. Further, our certificate of incorporation, as amended, contains provisions to indemnify our directors and officers to the fullest extent permitted by the General Corporation Law of Delaware.

Table of Contents

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. While the terms we have summarized below will apply generally to any future debt securities we may offer, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. If we indicate in a prospectus supplement, the terms of any debt securities we offer under that prospectus supplement may differ from the terms we describe below.

We will issue senior notes under a senior indenture, which we will enter into with a trustee to be named in the senior indenture. We will issue subordinated notes under a subordinated indenture, which we will enter into with a trustee to be named in the subordinated indenture. We have filed forms of these documents as exhibits to the registration statement, of which this prospectus forms a part. We use the term "indentures" to refer to both the senior indenture and the subordinated indenture. The indentures will be qualified under the Trust Indenture Act of 1939, or the Trust Indenture Act. We use the term "trustee" to refer to either the senior trustee or the subordinated trustee, as applicable.

The following summaries of material provisions of senior notes, subordinated notes and the indentures are subject to, and qualified in their entirety by reference to, the provisions of the indenture applicable to a particular series of debt securities. Except as we may otherwise indicate, the terms of the senior indenture and the subordinated indenture are identical.

General

If we decide to issue any senior notes or subordinated notes pursuant to this prospectus, we will describe in a prospectus supplement the terms of the series of notes, including the following:

the title;

any limit on the amount that may be issued;

whether or not we will issue the series of notes in global form, and, if so, who the depository will be;

the maturity date;

the annual interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

whether or not the notes will be secured or unsecured, and the terms of any secured debt;

whether or not the notes will be senior or subordinated;

the terms of the subordination of any series of subordinated debt;

the place where payments will be payable;

Edgar Filing: INFINITY PHARMACEUTICALS, INC. - Form S-3

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

the date, if any, after which, and the price at which, we may, at our option, redeem the series of notes pursuant to any optional redemption provisions;

the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of notes;

whether the indenture will restrict our ability to pay dividends, or will require us to maintain any asset ratios or reserves;

whether we will be restricted from incurring any additional indebtedness;

a discussion of any material or special U.S. federal income tax considerations;

Table of Contents

the denominations in which we will issue the series of notes, if other than denominations of \$1,000 and any integral multiple thereof; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplement the terms on which a series of notes may be convertible into or exchangeable for common stock or other securities of ours. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of common stock or other securities of ours that the holders of the series of notes receive would be subject to adjustment.

Consolidation, Merger or Sale

The indentures do not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor to or acquirer of such assets must assume all of our obligations under the indentures or the notes, as appropriate.

Events of Default Under the Indenture

The following are events of default under the indentures with respect to any series of notes that we may issue:

if we fail to pay interest when due and our failure continues for 90 days and the time for payment has not been extended or deferred;

if we fail to pay the principal, or premium, if any, when due and the time for payment has not been extended or delayed;

if we fail to observe or perform any other covenant contained in the notes or the indentures, other than a covenant specifically relating to another series of notes, and our failure continues for 90 days after we receive notice from the trustee or holders of at least 25% in aggregate principal amount of the outstanding notes of the applicable series; and

if we experience specified events of bankruptcy, insolvency or reorganization.

If an event of default with respect to notes of any series occurs and is continuing, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding notes of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal of, or premium, if any, on and accrued interest, if any, on the notes due and payable immediately.

The holders of a majority in principal amount of the outstanding notes of an affected series may waive any default or event of default with respect to the series and its consequences, except uncured defaults or events of default regarding payment of principal, or premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indentures, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of notes, unless such holders have offered the trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding notes of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the notes of that series, provided that:

the direction so given by the holder is not in conflict with any law or the applicable indenture; and

subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

Table of Contents

A holder of the notes of any series will only have the right to institute a proceeding under the indentures or to appoint a receiver or trustee, or to seek other remedies, if:

the holder has given written notice to the trustee of a continuing event of default with respect to that series;

the holders of at least 25% in aggregate principal amount of the outstanding notes of that series have made written request, and such holders have offered reasonable indemnity to the trustee to institute the proceeding as trustee; and

the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding notes of that series other conflicting directions within 60 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of notes if we default in the payment of the principal of, or the premium, if any, or interest on, the notes.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indentures.

Modification of Indenture; Waiver

We and the trustee may change an indenture without the consent of any holders with respect to specific matters, including:

to fix any ambiguity, defect or inconsistency in the indenture; and

to change anything that does not materially adversely affect the interests of any holder of notes of any series.

In addition, under the indentures, we and the trustee may change the rights of holders of a series of notes with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding notes of each series that is affected. However, we and the trustee may only make the following changes with the consent of each holder of any outstanding notes affected:

extending the fixed maturity of the series of notes;

reducing the principal amount, the rate of interest or any premium payable upon the redemption of any notes; or

reducing the minimum percentage of notes, the holders of which are required to consent to any amendment.

Discharge

Each indenture provides that we can elect, under specified circumstances, to be discharged from our obligations with respect to one or more series of debt securities, except for obligations to:

register the transfer or exchange of debt securities of the series;

replace stolen, lost or mutilated debt securities of the series;

maintain paying agencies;

hold monies for payment in trust;

compensate and indemnify the trustee; and

appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Table of Contents

Form, Exchange and Transfer

We will issue the notes of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indentures provide that we may issue notes of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, or DTC, or another depository named by us and identified in a prospectus supplement with respect to that series. See **Legal Ownership of Securities** for a further description of the terms relating to any book-entry securities.

At the option of the holder, subject to the terms of the indentures and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the notes of any series can exchange the notes for other notes of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indentures and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the notes may present the notes for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the notes that the holder presents for transfer or exchange, we will not require any payment for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any notes. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the notes of each series.

If we elect to redeem the notes of any series, we will not be required to:

issue, register the transfer of, or exchange any notes of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any notes that may be selected for redemption and ending at the close of business on the day of the mailing; or

register the transfer of or exchange any notes so selected for redemption, in whole or in part, except the unredeemed portion of any notes we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the trustee must use the same degree of care and skill as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given to it by the indentures at the request of any holder of notes unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any notes on any interest payment date to the person in whose name the notes, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest payment.

We will pay principal of and any premium and interest on the notes of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check which we will mail to the holder. Unless we otherwise indicate in a prospectus supplement, we will designate the corporate trust office of the trustee in The City of New York as our sole paying agent for payments with respect to notes of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the notes of a particular series. We will maintain a paying agent in each place of payment for the notes of a particular series.

Table of Contents

All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any notes which remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the security thereafter may look only to us for payment thereof.

Governing Law

The indentures and the notes will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

Subordination of Subordinated Notes

The subordinated notes will be unsecured and will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The subordinated indenture does not limit the amount of subordinated notes that we may issue. It also does not limit us from issuing any other secured or unsecured debt.

Table of Contents

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement, of which this prospectus forms a part.

General

We may issue warrants for the purchase of common stock, preferred stock or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and debt securities, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. We will indicate the name and address and other information regarding the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

If we decide to issue warrants pursuant to this prospectus, we will specify in a prospectus supplement the terms of the series of warrants, including, if applicable, the following:

the offering price and aggregate number of warrants offered;

the currency for which the warrants may be purchased;

the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;

the date on and after which the warrants and the related securities will be separately transferable;

in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;

in the case of warrants to purchase common stock, the number of shares of common stock purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;

the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;

the terms of any rights to redeem or call the warrants;

any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;

the dates on which the right to exercise the warrants will commence and expire;

the manner in which the warrant agreement and warrants may be modified;

a discussion of any material U.S. federal income tax considerations of holding or exercising the warrants;

the terms of the securities issuable upon exercise of the warrants; and

any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Table of Contents

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or

in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5:00 P.M. Eastern time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

Table of Contents

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee maintain for this purpose as the **holders** of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names as **indirect holders** of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depositary on behalf of other financial institutions that participate in the depositary's book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Securities issued in global form will be registered in the name of the depositary or its nominee. Consequently, for securities issued in global form, we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which will in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a book-entry security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary's book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities in non-global form. In these cases, investors may choose to hold their securities in their own names or in **street name**. Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee and of any third parties employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with depositary participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the

Table of Contents

consequences of a default or of our obligation to comply with a particular provision of the indenture or for other purposes. In such an event, we would seek approval only from the holders, and not the indirect holders, of the securities. Whether and how the holders contact the indirect holders is up to the holders.

Special Considerations For Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form or in street name, you should check with your own institution to find out:

how it handles securities payments and notices;

whether it imposes fees or charges;

how it would handle a request for the holders' consent, if ever required;

whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;

how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and

if the securities are in book-entry form, how the depository's rules and procedures will affect these matters.

Global Securities

A global security is a security held by a depository that represents one or any other number of individual securities. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depository. Unless we specify otherwise in the applicable prospectus supplement, DTC will be the depository for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depository, its nominee or a successor depository, unless special termination situations arise. We describe those situations below under "Special Situations When a Global Security Will Be Terminated." As a result of these arrangements, the depository, or its nominee, will be the sole registered owner and holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depository or with another institution that does. Thus, an investor whose security is represented by a global security will not be a holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued in global form only, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations For Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depository, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and

instead deal only with the depositary that holds the global security.

Table of Contents

If securities are issued only in the form of a global security, an investor should be aware of the following:

an investor cannot cause the securities to be registered in his or her name and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;

an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above under "Legal Holders";

an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;

an investor may not be able to pledge his or her interest in a global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;

the depositary's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in a global security. We and any applicable trustee have no responsibility for any aspect of the depositary's actions or for its records of ownership interests in a global security. We and the trustee also do not supervise the depositary in any way;

the depositary may, and we understand that DTC will, require that those who purchase and sell interests in a global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and

financial institutions that participate in the depositary's book-entry system, and through which an investor holds its interest in a global security, may also have their own policies affecting payments, notices and other matters relating to the securities. There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When A Global Security Will Be Terminated

In a few special situations described below, the global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

The global security will terminate when the following special situations occur:

if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;

if we notify any applicable trustee that we wish to terminate that global security; or

if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

Edgar Filing: INFINITY PHARMACEUTICALS, INC. - Form S-3

The prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the prospectus supplement. When a global security terminates, the depositary, and not we or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the securities being offered hereby in one or more of the following ways from time to time:

through agents to the public or to investors;

to one or more underwriters for resale to the public or to investors;

in at the market offerings, within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or into an existing trading market, on an exchange or otherwise;

directly to investors; or

through a combination of these methods of sale.

We will set forth in a prospectus supplement the terms of the offering of securities, including:

the name or names of any agents or underwriters;

the purchase price of the securities being offered and the proceeds we will receive from the sale;

any over-allotment options under which underwriters may purchase additional securities from us;

any agency fees or underwriting discounts and other items constituting agents or underwriters compensation;

the public offering price;

any discounts or concessions allowed or reallocated or paid to dealers; and

any securities exchanges on which such securities may be listed.

Underwriters, Agents and Dealers

If we use underwriters for a sale of our securities, the underwriters will acquire the securities for their own account. The underwriters may resell the securities in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase our securities will be subject to the conditions set forth in the applicable underwriting agreement. We may change from time to time any initial public offering price and any discounts or concessions the underwriters allow or reallocate or pay to dealers. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement naming the underwriter the nature of any such relationship.

Edgar Filing: INFINITY PHARMACEUTICALS, INC. - Form S-3

We may designate agents who agree to use their reasonable efforts to solicit purchases for the period of their appointment or to sell securities on a continuing basis.

If a dealer is utilized in the sale of securities in respect of which this prospectus is delivered, we will sell such securities to the dealer as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

Underwriters, dealers and agents that participate in the distribution of our securities may be underwriters as defined in the Securities Act, and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us or our subsidiaries in the ordinary course of their businesses.

Direct Sales

We may also sell securities directly to one or more purchasers without using underwriters or agents.

Table of Contents

Trading Markets and Listing of Securities

Unless otherwise specified in the applicable prospectus supplement, each class or series of securities will be a new issue with no established trading market, other than our common stock, which is listed on The NASDAQ Global Market. We may elect to list any other class or series of securities on any exchange, but we are not obligated to do so. It is possible that one or more underwriters may make a market in a class or series of securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for any of the securities.

Stabilization Activities

In connection with an offering, an underwriter may purchase and sell securities in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in the offering. Covered short sales are sales made in an amount not greater than the underwriters' option to purchase additional securities from us in the offering, if any. If the underwriters have an over-allotment option to purchase additional securities from us, the underwriters may close out any covered short position by either exercising their over-allotment option or purchasing securities in the open market. In determining the source of securities to close out the covered short position, the underwriters may consider, among other things, the price of securities available for purchase in the open market as compared to the price at which they may purchase securities through the over-allotment option. Naked short sales are any sales in excess of such option or where the underwriters do not have an over-allotment option. The underwriters must close out any naked short position by purchasing securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.

Accordingly, to cover these short sales positions or to otherwise stabilize or maintain the price of the securities, the underwriters may bid for or purchase securities in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if securities previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. The impositions of a penalty bid may also effect the price of the securities to the extent that it discourages resale of the securities. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on The NASDAQ Global Market or otherwise and, if commenced, may be discontinued at any time.

Any underwriters who are qualified market makers on the NASDAQ Global Market may engage in passive market making transactions in the securities on the NASDAQ Global Market in accordance with Rule 103 of Regulation M. Passive market makers must comply with applicable volume, price and other limitations of Rule 103.

Table of Contents

LEGAL MATTERS

The validity of the issuance of the securities offered by this prospectus will be passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP. Partners of Wilmer Cutler Pickering Hale and Dorr LLP beneficially own 9,455 shares of our common stock.

EXPERTS

The financial statements of Infinity Pharmaceuticals, Inc. as of December 31, 2004 and 2005 and for each of the three years ended December 31, 2005, included in the current report on Form 8-K/A filed by Infinity Pharmaceuticals, Inc. on October 27, 2006, which are incorporated herein by reference in this prospectus and elsewhere in the registration statement, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated by reference. Such financial statements are incorporated by reference in reliance upon such report, given on the authority of such firm as experts in accounting and auditing.

The consolidated financial statements of Discovery Partners International, Inc. appearing in the Discovery Partners International, Inc. Annual Report (Form 10-K) for the year ended December 31, 2005, and Discovery Partners International, Inc. management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2005 included therein, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated by reference. Such consolidated financial statements and management's assessment are incorporated by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements and other information with the SEC as required by the Exchange Act. You can find, copy and inspect information we file at the SEC's public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can call the SEC at 1-800-SEC-0330 for further information about the public reference room. You can review our electronically filed reports, proxy and information statements on the SEC's web site at <http://www.sec.gov> or on our web site at <http://www.ipi.com>. Information included on our web site is not a part of this prospectus or any prospectus supplement.

This prospectus is part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus regarding us and the securities, including exhibits and schedules. You can obtain a copy of the registration statement from the SEC at any address listed above or from the SEC's web site.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are incorporating by reference certain documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information in the documents incorporated by reference is considered to be part of this prospectus. Statements contained in documents that we file with the SEC and that are incorporated by reference in this prospectus will automatically update and supersede information contained in this prospectus, including information in previously filed documents or reports that have been incorporated by reference in this prospectus, to the extent the new information differs from or is inconsistent with the old information. The SEC file number for the documents incorporated by reference in this prospectus is 000-31141.

We have filed or may file the following documents with the SEC and they are incorporated herein by reference as of their respective dates of filing.

Table of Contents

our Annual Report on Form 10-K for the year ended December 31, 2005, filed by DPI with the SEC on March 16, 2006;

our Quarterly Report on Form 10-Q for the quarter ended March 31, 2006, filed by DPI with the SEC on May 10, 2006;

our Quarterly Report on Form 10-Q for the quarter ended June 30, 2006, filed by DPI with the SEC on August 9, 2006;

our Quarterly Report on Form 10-Q for the quarter ended September 30, 2006, filed with the SEC on November 9, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on February 23, 2006

our Current Report on Form 8-K filed by DPI with the SEC on March 31, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on April 5, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on April 12, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on April 25, 2006;

Items 2.06 and 8.01 of our Current Report on Form 8-K filed by DPI with the SEC on May 5, 2006;

our two Current Reports on Form 8-K filed by DPI with the SEC on June 14, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on June 29, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on July 11, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on July 31, 2006;

Item 8.01 of our Current Report on Form 8-K filed by DPI with the SEC on August 10, 2006;

our Current Report on Form 8-K filed by DPI with the SEC on September 11, 2006;

our Current Report on Form 8-K filed with the SEC on September 18, 2006;

Edgar Filing: INFINITY PHARMACEUTICALS, INC. - Form S-3

our Current Report on Form 8-K/A filed with the SEC on October 27, 2006;

our Current Report on Form 8-K filed with the SEC on October 31, 2006;

Item 8.01 of our Current Report on Form 8-K filed with the SEC on November 7, 2006;

our Current Report on Form 8-K filed with the SEC on December 20, 2006;

our Current Report on Form 8-K/A filed with the SEC on December 22, 2006;

the description of our common stock contained in our Registration Statement on Form 8-A dated July 25, 2000 and our Registration Statement on Form 8-A dated February 24, 2003, including any amendments or reports filed for the purpose of updating those descriptions; and

all documents filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (1) after the date of the filing of this registration statement and prior to its effectiveness and (2) until all of the common stock to which this prospectus relates has been sold or the offering is otherwise terminated, except in each case for information contained in any such filing where we indicate that such information is being furnished and is not to be considered filed under the Exchange Act, will be deemed to be incorporated by reference in this prospectus and the accompanying prospectus supplement and to be a part hereof from the date of filing of such documents.

You may request a copy of these documents, which will be provided to you at no cost, by writing or telephoning us using the following contact information:

Infinity Pharmaceuticals, Inc.

780 Memorial Drive

Cambridge, Massachusetts 02139

Attention: Investor Relations

Telephone: (617) 453-1000

Table of Contents

You should rely only on the information contained in this prospectus, including information incorporated by reference as described above, or any prospectus supplement or that we have specifically referred you to. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents or that any document incorporated by reference is accurate as of any date other than its filing date. You should not consider this prospectus to be an offer or solicitation relating to the securities in any jurisdiction in which such an offer or solicitation relating to the securities is not authorized. Furthermore, you should not consider this prospectus to be an offer or solicitation relating to the securities if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

Table of Contents**PART II****INFORMATION NOT REQUIRED IN PROSPECTUS****Item 14. Other Expenses of Issuance and Distribution**

The following table sets forth the fees and expenses to be incurred in connection with the registration of the securities being registered hereby, all of which will be borne by us. Except for the SEC registration fee, all amounts are estimates.

Description	Amount
SEC registration fee	\$ 16,050
Accounting fees and expenses	12,000
Legal fees and expenses	40,000
Printing and engraving expenses	10,000
Miscellaneous expenses	21,950
 Total expenses	 \$ 100,000

Item 15. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law, or the DGCL, empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director, officer, employee or agent of the corporation or another enterprise if serving such enterprise at the request of the corporation. Depending on the character of the proceeding, a corporation may indemnify against expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if the person indemnified acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. In the case of an action by or in the right of the corporation, no indemnification may be made in respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine that despite the adjudication of liability, but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses that the court shall deem proper. Section 145 further provides that to the extent a director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to above, or in defense of any claim, issue or matter therein, he or she shall be indemnified against expenses (including attorney's fees) actually and reasonably incurred by him or her in connection therewith.

Our certificate of incorporation and bylaws provide that we shall, to the fullest extent authorized by the DGCL, indemnify our directors and executive officers; provided, however, that we may limit the extent of such indemnification by individual contracts with our directors and executive officers; and, provided, further, that we shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person or any proceeding by such person against us or our directors, officers, employees or other agents unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the board of directors, and (iii) such indemnification is provided by us, in its sole discretion, pursuant to its powers under the DGCL.

Until September 2012, we must advance expenses to and indemnify each former director and officer of Discovery Partners International, Inc. against costs and damages incurred as a result of such director or officer serving as a director or officer of Discovery Partners International, Inc. to the fullest extent permitted under the DGCL.

We have entered into agreements to indemnify certain of our directors and former executive officers. These agreements, among other things, provide for indemnification of such directors and executive officers for expenses specified in the agreements, including attorneys' fees, judgments, fines and settlement amounts incurred by such directors or former executive officers in any action or proceeding arising out of that person's services as a director or executive officer of ours, any subsidiary of ours or any other entity to which the person provides or provided services at our request.

Table of Contents

Our bylaws also permit us to maintain insurance to protect us and any director, officer, employee or agent against any liability with respect to which we would have the power to indemnify such persons under the DGCL. We maintain an insurance policy insuring our directors and officers against certain liabilities.

Item 16. Exhibits

Exhibit Number	Description
1.1	The form of equity underwriting agreement will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
1.2	The form of debt underwriting agreement will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
3.1	Certificate of Incorporation of the Registrant. Previously filed as Exhibit 3.2 to the Registrant's Registration Statement on Form S-1 filed on June 23, 2000 (File No. 333-36638) and incorporated herein by reference.
3.2	Amendment to Registrant's Certificate of Incorporation, effecting a 1-to-4 reverse stock split of Discovery Partners common stock. Previously filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
3.3	Amendment to Registrant's Certificate of Incorporation, changing the name of the corporation from Discovery Partners International, Inc. to Infinity Pharmaceuticals, Inc. Previously filed as Exhibit 3.3 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
3.4	Bylaws of the Registrant. Previously filed as Exhibit 3.4 to the Registrant's Registration Statement on Form S-1 filed on June 23, 2000 (File No. 333-36638) and incorporated herein by reference.
3.5	Amendment to Registrant's Bylaws. Previously filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
4.1	Form of Common Stock Certificate. Previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
4.2	Rights Agreement between the Registrant and American Stock Transfer & Trust Company dated February 13, 2003, which includes the form of Certificate of Designation for the Series A junior participating preferred stock as Exhibit A, the form of Rights Certificate as Exhibit B and the Summary of Rights to Purchase Series A junior participating preferred stock as Exhibit C. Previously filed as Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on February 24, 2003 (File No. 000-31141) and incorporated herein by reference.
4.3	First Amendment to the Rights Agreement between the Registrant and American Stock Transfer & Trust Company dated April 11, 2006. Previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on April 12, 2006 (File No. 000-31141) and incorporated herein by reference.
4.4	Form of Senior Indenture.
4.5	Form of Subordinated Indenture.

Table of Contents

- 4.6 The form of any senior note with respect to each particular series of senior notes issued hereunder will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
- 4.7 The form of any subordinated note with respect to each particular series of subordinated notes issued hereunder will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
- 4.8 The form of any warrant agreement with respect to each particular series of warrants issued hereunder will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
- 4.9 The form of any certificate of designation with respect to any preferred stock issued hereunder and the related form of preferred stock certificate will be filed as exhibits to a current report of the Registrant on Form 8-K and incorporated herein by reference.
- 5.1 Opinion of Wilmer Cutler Pickering Hale and Dorr LLP
- 12.1 Statement re: Computation of Deficiency of Earnings to Fixed Charges
- 23.1 Consent of Ernst & Young LLP (Independent Registered Public Accounting Firm)
- 23.2 Consent of Ernst & Young LLP (Independent Registered Public Accounting Firm)
- 23.3 Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)
- 24.1 Power of Attorney (included on signature page)
- 25.1 The Statement of Eligibility on Form T-1 under the Trust Indenture Act of 1939 of the Trustee under the Senior Indenture will be incorporated herein by reference from a subsequent filing in accordance with Section 305(b)(2) of the Trust Indenture Act of 1939.
- 25.2 The Statement of Eligibility on Form T-1 under the Trust Indenture Act of 1939 of the Trustee under the Subordinated Indenture will be incorporated herein by reference from a subsequent filing in accordance with Section 305(b)(2) of the Trust Indenture Act of 1939.

Item 17. Undertakings

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

- (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
- (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement; and

Table of Contents

- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.
- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
- (A) Each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
- (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the Registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
- (i) Any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

Table of Contents

- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Securities and Exchange Commission under Section 305(b)(2) of the Trust Indenture Act.

Table of Contents

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on December 22, 2006.

INFINITY PHARMACEUTICALS, INC.

By: /s/ Steven H. Holtzman
 Steven H. Holtzman
 Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Infinity Pharmaceuticals, Inc., hereby severally constitute and appoint Steven Holtzman, Julian Adams, Adelene Perkins and Gerald Quirk and each of them singly, our true and lawful attorneys with full power to any of them, and to each of them singly, to sign for us and in our names in the capacities indicated below the registration statement on Form S-3 filed herewith and any and all pre-effective and post-effective amendments to said registration statement and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same with all exhibits thereto, and the other documents in connection therewith, with the Securities and Exchange Commission, and generally to do all such things in our name and behalf in our capacities as officers and directors to enable Infinity Pharmaceuticals, Inc. to comply with the provisions of the Securities Act of 1933, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said registration statement and any and all amendments thereto.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Steven H. Holtzman	Chairman and Chief Executive Officer	December 22, 2006
Steven H. Holtzman	(Principal Executive Officer)	
/s/ Adelene Q. Perkins	Chief Financial Officer and Treasurer	December 22, 2006
Adelene Q. Perkins	(Principal Financial Officer)	
/s/ Christopher M. Lindblom	Controller and Assistant Treasurer	December 22, 2006
Christopher M. Lindblom	(Principal Accounting Officer)	

Table of Contents

/s/ D. Ronald Daniel	Director	December 19, 2006
D. Ronald Daniel		
/s/ Anthony Evnin	Director	December 22, 2006
Anthony Evnin		
/s/ Harry Hixson	Director	December 22, 2006
Harry Hixson		
/s/ Eric Lander	Director	December 22, 2006
Eric Lander		
/s/ Patrick Lee	Director	December 22, 2006
Patrick Lee		
/s/ Arnold Levine	Director	December 22, 2006
Arnold Levine		
/s/ Franklin Moss	Director	December 21, 2006
Franklin Moss		
/s/ Herm Rosenman	Director	December 18, 2006
Herm Rosenman		
/s/ Vicki Sato	Director	December 20, 2006
Vicki Sato		
/s/ James Tananbaum	Director	December 22, 2006
James Tananbaum		
/s/ Michael Venuti	Director	December 22, 2006
Michael Venuti		

Table of Contents**EXHIBIT INDEX**

Exhibit Number	Description
1.1	The form of equity underwriting agreement will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
1.2	The form of debt underwriting agreement will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
3.1	Certificate of Incorporation of the Registrant. Previously filed as Exhibit 3.2 to the Registrant's Registration Statement on Form S-1 filed on June 23, 2000 (File No. 333-36638) and incorporated herein by reference.
3.2	Amendment to Registrant's Certificate of Incorporation, effecting a 1-to-4 reverse stock split of Discovery Partners common stock. Previously filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
3.3	Amendment to Registrant's Certificate of Incorporation, changing the name of the corporation from Discovery Partners International, Inc. to Infinity Pharmaceuticals, Inc. Previously filed as Exhibit 3.3 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
3.4	Bylaws of the Registrant. Previously filed as Exhibit 3.4 to the Registrant's Registration Statement on Form S-1 filed on June 23, 2000 (File No. 333-36638) and incorporated herein by reference.
3.5	Amendment to Registrant's Bylaws. Previously filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
4.1	Form of Common Stock Certificate. Previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on September 18, 2006 (File No. 000-31141) and incorporated herein by reference.
4.2	Rights Agreement between the Registrant and American Stock Transfer & Trust Company dated February 13, 2003, which includes the form of Certificate of Designation for the Series A junior participating preferred stock as Exhibit A, the form of Rights Certificate as Exhibit B and the Summary of Rights to Purchase Series A junior participating preferred stock as Exhibit C. Previously filed as Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on February 24, 2003 (File No. 000-31141) and incorporated herein by reference.
4.3	First Amendment to the Rights Agreement between the Registrant and American Stock Transfer & Trust Company dated April 11, 2006. Previously filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on April 12, 2006 (File No. 000-31141) and incorporated herein by reference.
4.4	Form of Senior Indenture.
4.5	Form of Subordinated Indenture.
4.6	The form of any senior note with respect to each particular series of senior notes issued hereunder will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.

Table of Contents

- 4.7 The form of any subordinated note with respect to each particular series of subordinated notes issued hereunder will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
- 4.8 The form of any warrant agreement with respect to each particular series of warrants issued hereunder will be filed as an exhibit to a current report of the Registrant on Form 8-K and incorporated herein by reference.
- 4.9 The form of any certificate of designation with respect to any preferred stock issued hereunder and the related form of preferred stock certificate will be filed as exhibits to a current report of the Registrant on Form 8-K and incorporated herein by reference.
- 5.1 Opinion of Wilmer Cutler Pickering Hale and Dorr LLP
- 12.1 Statement re: Computation of Deficiency of Earnings to Fixed Charges
- 23.1 Consent of Ernst & Young LLP (Independent Registered Public Accounting Firm)
- 23.2 Consent of Ernst & Young LLP (Independent Registered Public Accounting Firm)
- 23.3 Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)
- 24.1 Power of Attorney (included on signature page)
- 25.1 The Statement of Eligibility on Form T-1 under the Trust Indenture Act of 1939 of the Trustee under the Senior Indenture will be incorporated herein by reference from a subsequent filing in accordance with Section 305(b)(2) of the Trust Indenture Act of 1939.
- 25.2 The Statement of Eligibility on Form T-1 under the Trust Indenture Act of 1939 of the Trustee under the Subordinated Indenture will be incorporated herein by reference from a subsequent filing in accordance with Section 305(b)(2) of the Trust Indenture Act of 1939.