

Pro-Pharmaceuticals, Inc.
7 Wells Avenue
Newton, Massachusetts 02459

Via EDGAR and U.S. Mail

October 5, 2010

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549-4628 U.S.A.

Attention: Jeffrey Riedler, Assistant Director

Re: Pro-Pharmaceuticals, Inc.
Registration Statement on Form S-1
Filed September 17, 2010
File No. 333-169463

Dear Mr. Riedler:

This letter is submitted on behalf of Pro-Pharmaceuticals, Inc. (the "Company" or "we") in response to the comments of the staff of the Division of Corporation Finance of the U.S. Securities and Exchange Commission (the "Staff" or "you") dated September 27, 2010 (the "Comment Letter") with respect to the Company's Registration Statement on Form S-1 (the "Registration Statement"), which was filed on September 17, 2010.

For reference purposes, the text of the Comment Letter has been reproduced herein with a response below the comments. For your convenience, we have italicized each comment and have placed in boldface the heading of our response thereto.

General

1. *We note that you are registering the sale of 52,254,130 shares. Given the size relative to the number of shares outstanding held by non-affiliates, the nature of the offering and the selling shareholders, the transaction appears that it may be a primary offering. Because you would not be eligible to conduct a primary offering on Form S-3, you are not eligible to conduct a primary at-the-market offering under Rule 415(a)(4) on Form 5-1. As a result, if this offering is deemed to be a primary offering, you must:*
 - *file a registration statement for the "resale" offering at the time of each conversion of preferred stock or exercise of warrants because you are not eligible to conduct the offering on a delayed or continuous basis under Rule 415(a)(1)(x);*

- *identify the selling shareholders as underwriters in the registration statement; and*
- *include the fixed price at which the deemed underwriters will sell the securities.*

If you disagree with our analysis, please advise the staff of the company's basis for determining that the transaction is appropriately characterized as a transaction that is eligible to be made under Rule 415(a)(1)(i). In your analysis, please address the following, among any other relevant factors:

- *The number of selling shareholders and the percentage of the overall offering made by each shareholder;*
- *The date on which and the manner in which each selling shareholder received the shares and/or the overlying securities;*
- *The relationship of each selling shareholder with the company, including an analysis of whether the selling shareholder is an affiliate of the company;*
- *Any relationships among the selling shareholders;*
- *The dollar value of the shares registered in relation to the proceeds that the company received from the selling shareholders for the securities, excluding amounts of proceeds that were returned (or will be returned) to the selling shareholders and/or their affiliates in fees or other payments;*
- *The discount at which the shareholders will purchase the common stock underlying the convertible preferred stock and warrants upon conversion and exercise, respectively; and*
- *Whether or not any of the selling shareholders is in the business of buying and selling securities.*

Response to Comment No. 1

Rule 415 provides that "(a) [s]ecurities may be registered for an offering on a continuous or delayed basis in the future, provided that (1) the registration statement pertains only to (i) [s]ecurities which are to be offered or sold solely by or on behalf of ... persons other than the registrant, ..." These are commonly referred to as secondary offerings. We have reviewed the Staff's guidance set forth in Securities Act Rules Compliance and Disclosure Interpretations Question 612.09 that identifies certain factors to consider in determining whether "an offering styled as a secondary one is really on behalf of the issuer" and note its comment that the facts and circumstances of a transaction are critical to the determination. We also are aware that in recent years the Staff has raised concerns, usually with respect to PIPE transactions, that selling stockholders may be acting as underwriters and that the resale shelf transaction is an indirect primary offering where a significant percentage, such as greater than one third of the public float, is sought to be registered for resale.

The totality of the facts and circumstances demonstrate that in this case the selling stockholders listed in the Registration Statement are not acting as underwriters or conduits for the Company. Although the number of shares subject to the Registration Statement exceeds one-third of the public float, we respectfully submit that this should not be the determinative factor. We believe this factor is outweighed by the following:

- The Registration Statement names three selling stockholders, the principal one being the 10X Fund, L.P. (“10X Fund”) which owns or has rights to acquire more than 99% of the shares of the common stock of the Company (the “Common Stock” offered for resale in the Registration Statement (the “Resale Shares”). Of the approximately 52,000,000 Resale Shares that the 10X Fund is offering to sell, 48,000,000, or more than 92%, of the Resale Shares cannot be sold until the 10X Fund actually acquires the shares of Common Stock (the “Underlying Shares”) by converting its shares of the Company’s Series B-1 Convertible Preferred Stock and Series B-2 Convertible Preferred Stock (collectively, the “Series B Preferred”) and exercising the related warrants (the “Series B Related Warrants”).
- The 10X Fund and the Company entered into definitive agreements dated February 12, 2009 (the “Sale Date”) for the issuance and sale of the Series B Preferred and Series B Related Warrants (collectively, the “Purchased Securities”), which were acquired in a series of tranches. The Company was actively pursuing other financing opportunities in the first quarter of 2009, including a rights offering, and the principals of the 10X Fund were not then directors of the Company; accordingly, it conducted the negotiations with the 10X Fund at arms’ length. The terms of the acquisition of the Purchased Securities, including purchase price, were “fixed” in the transaction documents as of the Sale Date (which specified \$0.50 as the conversion price for the Series B Preferred and as the exercise price for the Series B Related Warrants when the trading price of the Underlying Shares was \$0.20) notwithstanding that the 10X Fund elected to complete its acquisition in tranches.
- The three selling stockholders named in the Registration Statement are not a “group” within the meaning of Section 13(d)(3) of the Securities Exchange Act of 1934. David Platt, Ph.D., although a founding stockholder and former chief executive officer resigned from the Company on the Sale Date and since then has had no relation with the Company other than as a stockholder. He and the third selling stockholder acquired their securities (described in Response No. 7 below) in a transaction separate from and prior to that of the 10X Fund.
- The intention of 10X Fund to be a long-term investor in the Company, rather than a purchaser who could be deemed an underwriter by virtue of seeking an immediate resale “exit” from its investment, is apparent from several factors:
 - First, during the approximately 18-month period since the Sale Date, the 10X Fund has neither converted nor exercised any of the Purchased Securities to acquire Underlying Shares, nor during such period has it sold under Rule 144 any shares of Common Stock that it received as stock dividends on the Series B Preferred. Not until May 2010 (and after nearly all tranches of the Purchased Securities) has the trading price of the Common Stock consistently exceeded \$0.50

- Second, as a condition to the investment, the 10X Fund required the replacement of four of the nine members of the Company's Board of Directors, of which two of the four Board positions are nominated and elected by the 10X Fund as sole holder of the Series B Preferred which votes as a separate class on this matter. Although one or more of the new Board members may also be limited partners of the 10X Fund, they were selected primarily because they are public company veteran executives or well-known for their expertise in drug and business development and related regulatory matters. Following their appointment to fill vacancies created by the resignations of four former members of the Board, the new Board members were elected at the 2009 and 2010 annual stockholders meetings.
- Third, 10X Fund negotiated to structure the Purchased Securities to create a long-term investment incentive. For example, each share of Series B Preferred, purchased for \$2.00, converts at a fixed ratio to four Underlying Shares (1:4) rather than at a floating rate discounted relative to the then-trading price of the Common Stock. In addition, the exercise price for the Series B Related Warrants was fixed at \$0.50 per share (250% of the \$0.20 Common Stock trading price on the Sale Date) so as to avoid triggering full-ratchet anti-dilution exercise price protection of warrants previously sold by the Company. Two classes of the Series B Related Warrants contain a mandatory exercise "window" that starts when the Company's Common Stock trading price reaches certain levels such that, if exercised, the Company receives cash proceeds or, if declined the warrants expire, thus preventing further stockholder dilution. These factors make clear that 10X Fund acquired the Purchased Securities with an intent to "restart" the Company and without any certainty or contractual assurances that it would ever be economic to convert or exercise these securities.
- Although the 10X Fund would likely be deemed an affiliate of the Company by virtue of its rights contained in the certificate of designation for the Series B Preferred and percentage of its stock ownership, the limited trading volume and relatively low trading price of the Common Stock prevent 10X Fund, as a practical matter, from aggressively exiting its investment for the foreseeable future.

- The 10X Fund purchased, for net proceeds of \$5.53 million, 3,000,000 shares of Series B Preferred convertible to 12,000,000 Underlying Shares and Series B Related Warrants exercisable to purchase 36,000,000 Underlying Shares. Insofar as the closing price of the Common Stock was \$0.20 per share on the Sale Date, representing approximately \$2,400,000 in market value for 12,000,000 Underlying Shares issuable had the 10X Fund then converted its shares of Series B Preferred, it is clear the net proceeds of the investment substantially exceeded the then value of the Underlying Shares. Moreover, as long as a registration statement is in effect with respect to the 36,000,000 Resale Shares issuable upon exercise of the Series B Related Warrants, the warrants are exercisable solely for cash, which if fully exercised would result in an additional \$18,000,000 to the Company.
- None of the selling stockholders is in the business of buying and selling securities. To our knowledge, the 10X Fund has not invested in any other company.

Based on the foregoing facts and circumstances, we believe the transaction subject to the Registration Statement is a secondary offering eligible to be made under Rule 415(a)(1)(i) and that the selling stockholders should not be deemed underwriters.

Dollar value of underlying securities

2. Please provide us, with a view toward disclosure in the prospectus, with the total dollar value of the securities underlying the convertible preferred stock that you have registered for resale (using the number of underlying securities that you have registered for resale and the market price per share for those securities on the date of the sale of the convertible preferred stock).

Response to Comment No. 2

Based on the \$0.20 market price of the Underlying Shares on the Sale Date, the total dollar value of 12,000,000 Underlying Shares relative to the Series B Preferred was \$2,400,000, an amount that is substantially less than the \$6,000,000 paid for the Purchased Securities.

Payments to the investor and affiliates

3. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of the dollar amount of each payment (including the value of any payments to be made in common stock) in connection with the transaction that you have made or may be required to make to any selling shareholder, any affiliate of a selling shareholder, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (including any interest payments, liquidated damages, payments made to "finders" or "replacement agents," and any other payments or potential payments). Please provide footnote disclosure of the terms of each such payment. Please do not include any repayment of the convertible preferred stock in this disclosure.

Further, please provide us, with a view toward disclosure in the prospectus, with disclosure of the net proceeds to the issuer from the sale of the convertible preferred stock and the total possible payments to all selling shareholders and any of their affiliates in the first year following the sale of the convertible preferred stock.

Response to Comment No. 3

Please see the table below which sets forth payments we made to or on behalf of the 10X Fund as of the first anniversary (February 12, 2010) of the Sale Date and as of the sale of the final tranche of the Purchased Securities (May 10, 2010). We did not pay any amounts to its affiliates. We have no further payment obligations to or on behalf of the 10X Fund in connection with the sale of the Purchased Securities. The net proceeds to us was \$5,532,955.

	Paid as of First Anniversary of Sale Date	Total Paid
Origination Fee (3%) paid to 10X Fund	\$ 143,550	\$180,000
10X Fund counsel fee	130,410	150,285
Other professional & consulting fees of 10X Fund	84,761	88,661
Other 10X Fund expenses	47,558	48,099
	<u>\$ 406,279</u>	<u>\$467,045</u>

Potential profits on conversion

4. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:
- the total possible profit the selling shareholders could realize as a result of the conversion discount for the securities underlying the convertible preferred stock, presented in a table with the following information disclosed separately:
 - the market price per share of the securities underlying the convertible preferred stock on the date of the sale of the convertible preferred stock;
 - the conversion price per share of the underlying securities on the date of the sale of the convertible preferred stock, calculated as follows:
 - if the conversion price per share is set at a fixed price, use the price per share established by the convertible preferred stock, and
 - if the conversion price per share is not set at a fixed price and, instead, is set at a floating rate in relationship to the market price of the underlying security, use the conversion discount rate and the market rate per share on the date of the sale of the convertible preferred stock and determine the conversion price per share as of that date;

- *the total possible shares underlying the convertible preferred stock (assuming no interest payments and complete conversion throughout the term of the convertible preferred stock);*
 - *the combined market price of the total number of shares underlying the convertible preferred stock, calculated by using the market price per share on the date of the sale of the convertible preferred stock and the total possible shares underlying the convertible preferred stock;*
 - *the total possible shares the selling shareholders may receive and the combined conversion price of the total number of shares underlying the convertible preferred stock calculated by using the conversion price on the date of the sale of the convertible preferred stock and the total possible number of shares the selling shareholders may receive; and*
 - *the total possible discount to the market price as of the date of the sale of the convertible preferred stock, calculated by subtracting the total conversion price on the date of the sale of the convertible preferred stock from the combined market price of the total number of shares underlying the convertible preferred stock on that date,*

If there are provisions in the convertible preferred stock that could result in a change in the price per share upon the occurrence of certain events, please provide additional tabular disclosure as appropriate. For example, if the conversion price per share is fixed unless and until the market price falls below a stated price, at which point the conversion price per share drops to a lower price, please provide additional disclosure.

Response to Comment No. 4

Based on (i) a purchase price of \$2.00 per share of Series B Preferred, which convert at a fixed ratio of one to four (1:4) Underlying Shares, or \$0.50 per Underlying Share, and (ii) the \$0.20 trading price of the Common Stock on the Sale Date, the shares of Series B Preferred were not convertible at a discount on the Sale Date. Accordingly, the 10X Fund could not convert at a profit based on information known as of the Sale Date. The maximum number of Underlying Shares to which the 10X Fund would be entitled upon conversion of the Series B Preferred is 12,000,000. Except for adjustment in the event of stock splits, recapitalizations and the like, the number of Underlying Shares is not adjustable. In other words, the number of Underlying Shares issuable upon conversion of the Series B Preferred never adjusts or drops based on market price triggers.

Total potential profit from other securities

5. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:

- the total possible profit to be realized as a result of any conversion discounts for securities underlying any other warrants options, notes, or other securities of the issuer that are held by the selling shareholders or any affiliates of the selling shareholders, presented in a table with the following information disclosed separately:
- market price per share of the underlying securities on the date of the sale of that other security;
- the conversion/exercise price per share as of the date of the sale of that other security, calculated as follows:
 - if the conversion/exercise price per share is set at a fixed price, use the price per share on the date of the sale of that other security; and
 - if the conversion/exercise price per share is not set at a fixed price and, instead, is set at a floating rate in relationship to the market price of the underlying security, use the conversion/exercise discount rate and the market price per share on the date of the sale of that other security and determine the conversion price per share as of that date;
- the total possible shares to be received under the particular securities (assuming complete conversion/exercise);
- the combined market price of the total number of underlying shares, calculated by using the market price per share on the date of the sale of that other security and the total possible shares to be received;
- the total possible shares to be received and the combined conversion price of the total number of shares underlying that other security calculated by using the conversion price on the date of the sale of that other security and the total possible number of underlying shares; and
- the total possible discount to the market price as of the date of the sale of that other security, calculated by subtracting the total conversion/exercise price on the date of the sale of that other security from the combined market price of the total number of underlying shares on that date.

Response to Comment No. 5

Based on (i) a fixed exercise price of \$0.50 per share with respect to the Series B Related Warrants, and (ii) the \$0.20 trading price of the Common Stock on the Sale Date, the Series

B Related Warrants were not exercisable at a discount as of the Sale Date. Accordingly, the 10X Fund could not profitably exercise the Series B Related Warrants based on information known as of the Sale Date. The maximum number of Underlying Shares to which 10X Fund would be entitled to receive upon exercise of the Series B Related Warrants is 36,000,000. Except for adjustment in the event of stock splits, recapitalizations and the like, the exercise price and number of Underlying Shares issuable upon exercise of the Series B Related Warrants are not adjustable. In other words, the exercise price for, and number issuable of, the Underlying Shares upon exercise of the Series B Related Warrants never adjusts or drops based on market price triggers.

Comparison of issuer proceeds to potential investor profit

6. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of:

- the gross proceeds paid or payable to the issuer in the convertible preferred stock transaction;
- all payments that have been made or that may be required to be made by the issuer that are disclosed in response to comment 2;
- the resulting net proceeds to the issuer; and
- the combined total possible profit to be realized as a result of any conversion discounts regarding the securities underlying the convertible preferred stock and any other warrants, options, notes, or other securities of the issuer that are held by selling shareholders or any affiliates of the selling shareholders that is disclosed in response to comments 3 and 4.

Further, please provide us, with a view toward disclosure in the prospectus, with disclosure — as a percentage — of the total amount of all possible payments as disclosed in response to comment 2 and the total possible discount to the market price of the shares underlying the convertible preferred stock as disclosed in response to comment 3 divided by the net proceeds to the issuer from the sale of the convertible preferred stock, as well as the amount of that resulting percentage averaged over the term of the convertible preferred stock.

Response to Comment No. 6

We believe this Comment No. 6 is intended to cross reference Comment No. 3 and respond accordingly. Please refer to our Responses to Comment Nos. 4 and 5 in which we demonstrate that the Purchased Securities were not sold at a discount to the Underlying Shares and, as of the Sale Date, could not be profitably converted or exercised. The percentage of net proceeds to gross proceeds was 92.2%. Please see the table below:

Gross proceeds received by the Company	\$6,000,000
All payments made by the Company (see Response No. 3)	\$ 467,045
Net proceeds to the Company	\$5,532,955

Prior transactions between the issuer and the selling shareholders

7. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure of all prior securities transactions between the issuer (or any of its predecessors) and the selling shareholders, any affiliates of the selling shareholders, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (or any predecessors of those persons), with the table including the following information disclosed separately for each transaction:

- the date of the transaction;
- the number of shares of the class of securities subject to the transaction that were outstanding prior to the transaction;
- the number of shares of the class of securities subject to the transaction that were outstanding prior to the transaction and held by persons other than the selling shareholders, affiliates of the company, or affiliates of the selling shareholders;
- the number of shares of the class of securities subject to the transaction that were issued or issuable in connection with the transaction;
- the percentage of total issued and outstanding securities that were issued or issuable in the transaction (assuming full issuance), with the percentage calculated by taking the number of shares issued and outstanding prior to the applicable transaction and held by persons other than the selling shareholders, affiliates of the company, or affiliates of the selling shareholders, and dividing that number by the number of shares issued or issuable in connection with the applicable transaction;
- the market price per share of the class of securities subject to the transaction immediately prior to the transaction (reverse split adjusted, if necessary); and the current market price per share of the class of securities subject to the transaction (reverse split adjusted, if necessary).

Response to Comment No. 7

Prior to the Sale Date, there were no securities transactions between the Company and any of the selling stockholders, or their affiliates, other than as stated below. Share numbers below derive from the Company's proxy statement (filed shortly after the Sale Date) for the 2009 annual stockholders' meeting. Although we provide detail for each selling stockholder below for your benefit, we do not believe a tabular presentation in the Registration Statement

of the information sought by Comment No. 7 is useful for two reasons: First, 94% of the shares of Common Stock beneficially owned by James C. Czirr (an affiliate of the 10X Fund) as of the Sale Date were issued to him as “founder’s shares” nearly eight years before the Sale Date. Second, although David Platt, Ph.D., owned nearly 5 million “founder’s shares” as of the Sale Date, the Company’s proxy statement for the 2010 annual stockholders’ meeting does not include him in the beneficial ownership table and, accordingly, we have reason to believe he sold a substantial portion or all of these shares after the Sale Date and after he ceased to be an affiliate of the Company. Moreover, the shares of Common Stock underlying his Series A Related Warrants constitute less than 1% of the Resale Shares, which is also the case for Yona Binder.

Additional detail with respect to securities transactions between the three selling stockholders and the Company is as follows:

- Mr. Czirr, is a founder of the Company, an affiliate of the 10X Fund (as a manager of its general partner) and, since the Sale Date, Chairman or Executive Chairman of the Company. He was issued (i) 4,939,868 shares of Common Stock issued at the inception of the Company in May 2001, of which 125,000 shares were registered for resale in a registration statement filed December 31, 2003 (the “2003 Registration Statement”), and (ii) in connection with his participation in a private placement we completed in February 2008, (a) 100,000 shares of our Series A 12% Convertible Preferred Stock (the “Series A Preferred”) convertible on a fixed one-to-one basis to shares of Common Stock, none of which have been converted, (b) a related warrant exercisable for 100,000 shares of Common Stock at a non-adjustable price of \$1.50 per share, which remains unexercised, (c) a related warrant exercisable for 100,000 shares of Common Stock at a non-adjustable price of \$2.00 per share, which remains unexercised (collectively, the “Series A Related Warrants”), and (d) shares of Common Stock issued to him as stock dividends on his shares of Series A Preferred. The shares of Common Stock underlying the Series A Preferred and Series A Related Warrants held by Mr. Czirr were previously registered for resale. Mr. Czirr’s 100,000 shares of Series A Preferred represented approximately 5.7% of the Series A Preferred that we issued and sold.
- Dr Platt is a founder of the Company and was its chief executive officer until the Sale Date. He was issued (i) 4,949,247 shares of Common Stock at the Company’s May 2001 inception, of which 200,000 shares were registered for resale in the 2003 Registration Statement; and (ii) (a)100,000 shares of Series A Preferred, which have been converted, and (b) Series A Related Warrants exercisable to purchase 200,000 shares of Common Stock. Dr. Platt’s 100,000 shares of Series A Preferred represented approximately 5.7% of the Series A Preferred that we issued and sold. The resale of the 200,000 shares of Common Stock underlying Dr. Platt’s Series A Related Warrants is being registered in this Registration Statement.

- Ms. Binder, family member of a third founder of the Company, has not directly participated in any securities transaction with the Company. By gift transfer, she owns Series A Related Warrants exercisable to purchase 50,000 shares of Common Stock. The resale of the shares of Common Stock underlying Ms. Binder's Series A Related Warrants is being registered in this Registration Statement.

Comparison of registered shares to outstanding shares

8. Please provide us, with a view toward disclosure in the prospectus, with tabular disclosure comparing:
- the number of shares outstanding prior to the convertible preferred stock transaction that are held by persons other than the selling shareholders, affiliates of the company, and affiliates of the selling shareholders
 - the number of shares registered for resale by the selling shareholders or affiliates of the selling shareholders in prior registration statements;
 - the number of shares registered for resale by the selling shareholders or affiliates of the selling shareholders that continue to be held by the selling shareholders or affiliates of the selling shareholders;
 - the number of shares that have been sold in registered resale transactions by the selling shareholders or affiliates of the selling shareholders; and
 - the number of shares registered for resale on behalf of the selling shareholders or affiliates of the selling shareholders in the current transaction.

In this analysis, the calculation of the number of outstanding shares should not include any securities underlying any outstanding convertible securities, options, or warrants,

Response to Comment No. 8

Number of shares of Common Stock outstanding prior to the Sale Date held by persons other than selling shareholders, affiliates of the Company, and affiliates of the selling shareholders	40,523,861	(1)
Number of shares of Common Stock registered for resale by selling shareholders or affiliates in prior registration statements	325,000	(2)
Number of shares of Common Stock that have been sold in registered resale transactions by the selling shareholders or affiliates	200,000	(3)
Number of shares of Common Stock registered for resale on behalf of the selling shareholder or affiliates in the current transaction	52,254,130	(4)

- (1) Assumes shares outstanding at Sale Date of 48,252,159, less 4,352,168 shares owned by James C. Czirr, 3,045,846 shares owned by David Platt and 330,284 shares owned by other affiliates of the Company
- (2) Includes 200,000 and 125,000 shares of Common Stock held or formerly held by Dr. Platt and Mr. Czirr, respectively, subject to the 2003 Registration Statement and excludes a de minimus number of shares of Common Stock issued as dividends on Series A Preferred to Dr. Platt, Mr. Czirr and Ms. Binder
- (3) Assumes sale by Dr. Platt of all shares registered in the 2003 Registration Statement
- (4) Includes 12,000,000 Underlying Shares with respect to the Series B Preferred and 36,000,000 Underlying Shares with respect to the Series B Related Warrants, 4,004,130 shares of Common Stock issued or issuable as stock dividends on the Series B Preferred through March 31, 2012 and 250,000 shares of Common Stock underlying the Series A Related Warrants.

The presence or absence of short selling by the selling shareholders

9. Please provide us, with a view toward disclosure in the prospectus, with the following information:

- whether— based on information obtained from the selling shareholders — any of the selling shareholders have an existing short position in the company's common stock and, if any of the selling shareholders have an existing short position in the company's stock, the following additional information:
- the date on which each such selling shareholder entered into that short position; and
- the relationship of the date on which each such selling shareholder entered into that short position to the date of the announcement of the convertible preferred stock transaction and the filing of the registration statement (e.g., before or after the announcement of the convertible preferred stock transaction, before the filing or after the filing of the registration statement, etc.).

Response to Comment No. 9

We have not received any information, and have no reason to believe, that a selling stockholder has an existing short position with respect to any of the Resale Shares.

Relationships between the issuer and selling shareholders

10. Please provide us, with a view toward disclosure in the prospectus, with:

- a materially complete description of the relationships and arrangements that have existed in the past three years or are to be performed in the future between the issuer (or any of its predecessors) and the selling shareholders, any affiliates of the selling shareholders, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (or any predecessors of those persons) — the information provided should include, in reasonable detail, a complete description of the rights and obligations of the parties in connection with the sale of the convertible preferred stock; and
- copies of all agreements between the issuer (or any of its predecessors) and the selling shareholders, any affiliates of the selling shareholders, or any person with whom any selling shareholder has a contractual relationship regarding the transaction (or any predecessors of those persons) in connection with the sale of the convertible preferred stock.

If it is your view that such a description of the relationships and arrangements between and among those parties already is presented in the prospectus and that all agreements between and/or among those parties are included as exhibits to the registration statement, please provide us with confirmation of your view in this regard.

Response to Comment No. 10

The relationship of the 10X Fund with the Company did not exist prior to the Sale Date. The 10X Fund is solely an investor in the Company with rights and privileges incident to the Series B Preferred held by it, as set forth in the designation certificate for such series, and under related transaction documents such as the securities purchase agreement and registration rights agreement, and as a holder of Series B Related Warrants (such documents set forth as Exhibits 4.4, 4.5, 4.6, 4.7 and 4.8, respectively, to the Registration Statement). No affiliate of the 10X Fund had any relationship with the Company during the previous three years other than as a holder of Company securities (see Response No. 7 above). Other than performing obligations under these transaction documents, there are no arrangements or understandings for future performance by the 10X Fund with respect to the Company. The rights and privileges incident to the Series B Preferred were reported in a Form 8-K Current Report filed on February 18, 2009, to which the designation certificate for the Series B Preferred was attached as Exhibit 3.1 thereto.

In February 2008 Dr. Platt purchased shares of our Series A Preferred Stock and Series A Related Warrants (for detail, please see Response No. 7). The Series A Related Warrants are forth as Exhibit 4.2 and 4.3 to the Registration Statement. Dr. Platt is a party to a separation agreement entered into as of his departure date (the Sale Date), which was reported in a Form 8-K Current Report and set forth as Exhibit 10.8 thereto. We do not believe the separation agreement is material to the Registration Statement and, accordingly, have not included it as an exhibit. There are no other arrangements between Dr. Platt and the Company to be performed in the future.

Ms. Binder received by gift transfer her Series A Related Warrants, which are set forth as Exhibits 4.2 and 4.3 to the Registration Statement. There are no other arrangements between Ms. Binder and the Company to be performed in the future.

We believe the description of the relationships and arrangements between and among the parties, particularly with respect to the Purchased Securities and Underlying Shares relative to the 10X Fund is already presented in the prospectus, and that all relevant agreements and arrangements are contained in the exhibits to the Registration Statement.

Please contact me at 617.559.0033 or our counsel, Jonathan Guest, at 617.449.6598 if you have any questions regarding our responses.

Sincerely,

/s/ Theodore D. Zucconi

Theodore D. Zucconi, Ph.D.
Chief Executive Officer and President