

February 5, 2009

Mr. Todd E. Hardiman
Associate Chief Accountant
Division of Corporation Finance
United States Securities and Exchange Commission
100 F. Street, N.E.
Washington, D.C. 20549

RE: Protalix BioTherapeutics, Inc.
Annual Report on Form 10-K, filed March 17, 2008
for the Fiscal Year Ended December 31, 2007
File No. 001-33357

Ladies and Gentlemen:

On behalf of our client, Protalix BioTherapeutics, Inc., a Florida corporation (the "Company"), transmitted herewith are responses to the Staff's comments to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2007 (the "Form 10-K"), which comments were delivered by the Staff to the Company's counsel by way of telephone calls on January 22, 2009.

For ease of reference, we have noted the Staff's comments in bold faced type and the responses in regular type.

1. In a verbal comment issued by the Staff to the Company on January 22, 2009, reference was made to the Company's treatment of the exchange of certain options and warrants in connection with the December 31, 2006, merger as a modification. The Staff requested that the Company provide an analysis of the Company's application of the modification treatment of the options and warrants issued with respect to the lock up imposed on such options and warrants upon the closing of the Merger and upon the termination of related lock-up agreements on June 11, 2008.

RESPONSE: As discussed in the Company's response of December 23, 2008, on December 31, 2006, the Company's wholly-owned subsidiary, Protalix Acquisition Co., Ltd., merged with and into Protalix Ltd., a privately-held Israeli biotechnology company (the "Merger"). In connection with the Merger, the Company issued options and warrants in exchange for substantially similar securities issued by Protalix Ltd. prior to the Merger. For accounting purposes, the Company

treated the exchange as a modification of such securities and determined that the modification did not result in an increase in the incremental value of the securities. Accordingly, the Company did not record any incremental compensation costs due to the modification of stock options in connection with the exchange of the Protalix Ltd. options in connection with the Merger. The underlying business purpose of the modification was to provide the holders of Protalix Ltd. securities with the same terms and conditions with respect to the new options and warrants as they had with respect to the options and warrants surrendered in connection with the Merger.

Notwithstanding the foregoing, the terms of the Merger required that 90% of the shares, options and warrants of each holder be subject to a lock-up agreement for a two-year period to satisfy certain conditions imposed on the transaction by the Israeli Tax Authorities. The Company determined that the lock-up agreements imposed on the holders of such securities by the Israeli Tax Authorities did not significantly diminish the value of the locked-up options and warrants and, accordingly, the Company did not adjust the calculated value of the outstanding options and warrants to reflect the imposition of the related transfer restrictions.

Similarly, the Company determined that the termination of certain lock-up agreements (for shareholders holding less than 5% of the Company's shares outstanding at that time) in June 2008 resulting from the completion of negotiations with the Israeli Tax Authorities did not significantly increase the value of the options and warrants. The termination of the lock-up agreements did not result in any incremental value to the holders of the applicable securities as the valuation assumptions, including the expected term, did not increase. For reference purposes, the lock-up agreements had a term of two years and the contractual term of the applicable options are 10 years. Further, the expected term of the options at the time that the holders entered into the lock-up agreements and at the time that the lock-up agreements were terminated well exceeded the lock-up period and therefore applied only to a portion of the expected term of the applicable securities. Last, the lock-up period did not cause an increase in the expected term assumption or any other adjustment to the calculated value of the applicable securities and, accordingly, did not impact the value of the securities.

2. In a verbal comment issued by the Staff to the Company on January 22, 2009, the Staff requested that the Company provide an example of how it applies straight-line attribution to nonemployee equity awards.

RESPONSE: An example of the Company's application of the straight-line method in connection with the accounting of equity awards issued to nonemployees is set forth in Exhibit C hereto.

3. In reference to a verbal comment that the Staff issued to the Company on August 28, 2008 regarding the Company's response dated July 11, 2008, the Staff requested that the Company confirm that it will include a note to the contractual obligations table in future filings that explains what the purchase obligations represent.

RESPONSE: The Company will include a note to the contractual obligations table in its future filings that explains what the purchase obligations represent.

4. Please tell us how the 2,712,792 options issued immediately after the December 31, 2006 merger as referred to on Page 3 of your response relates to the 387,542 options issued in Exhibit B of your October 16, 2007 response. Also, please tell us the accounting treatment relating to the issuance of those options and subsequent vesting.

RESPONSE: The 2,712,792 options issued by the Company immediately after the Merger as referred to on Page 3 of the Company's December 23, 2008 response includes the 387,542 options listed in Exhibit B of the Company's October 16, 2008 response. The accounting treatment applied by the Company in connection with the issuance of the 387,542 options was straight-line attribution in the manner described in the example described in Comment 2 and Exhibit C to this response.

5. Please confirm that you will revise your policy and disclosure in future filings to use the contractual term of the options to estimate the expected term rather than the simplified method.

RESPONSE: The Company confirms that it will revise its policy and disclosure in future filings regarding future grants to use the contractual term of an option to estimate the expected term of the option rather than the simplified method.

6. Please explain to us why there are two different trading values listed in Exhibit A of your response dated October 16, 2008 for May 15, 2007. Please confirm which trading value you used to calculate the compensation expense recorded in 2007 related to the 204,351 options granted to employees. In addition, please explain to us why the amount of compensation recorded in 2008 related to these options was a negative amount.

RESPONSE: The two different trading prices listed in Exhibit A of the Company's October 16, 2008 response for May 15, 2007 were the result of a typographical error in the Exhibit. There was no difference between the "Fair value used" and the "Trading value on the measurement date" of each of the awards issued in May 15, 2007. The closing price of the Company's common stock on May 15, 2007 was \$31.40, which was also the input price used for by the Company for the purposes of calculating the common stock in the valuation of the awards. The measurement date of the restricted stock issued on May 15, 2007 (row 3) should have been listed as June 30, 2007, at which time both the "Trading value on the measurement date" and the "Fair value used" of such restricted shares were each \$26.99.

The amount of compensation recorded for 2007 and for the six months ended June 30, 2008 for both of the issuances on May 15, 2007 listed in Exhibit A of the Company's October 16, 2008 response is correct. A revised analysis of the two issuances of May 15, 2007 is attached as Exhibit D to this response. The employment by the Company of the employee that received the 204,351 options on May 15, 2007 was terminated on May 6, 2008, prior to the completion of the entire vesting period of the option. Accordingly, the Company recorded a reversal of stock compensation expense related to unvested awards during the termination period, which reversal resulted in a negative number.

7. Please reconcile the total expense for 2007 shown in Exhibits A and B of your response dated October 16, 2008 to the total share-based compensation expense for 2007 of 10,845,000.

RESPONSE: Exhibit A of the Company's response of October 16, 2008 is an analysis of all equity issuances in 2007 and 2008 (through the date of the response). Exhibit B of the Company's response of October 16, 2008 is an analysis of all issuances and grants to non-employees for which compensation expenses were recorded by the Company in 2007 and 2008 (through June 30, 2008). The analysis in Exhibit B of the Company's response of October 16, 2008 includes compensation expense recorded for options granted to nonemployees that were remeasured during the applicable time period in accordance with Statement of Financial Accounting Standards No. 123 (Revised 2004), "Share-Based Payment" and Emerging Issue Task Force 96-18 "Accounting for Equity Instruments that are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services." The analysis does not include any compensation expense recorded for equity awards issued prior to 2007. Such awards were measured as of their respective grant dates but the expenses are recorded over their respective vesting periods. This reconciliation is summarized below:

<u>Description</u>	<u>Amount (in thousands)</u>
Non-employee awards (see Exhibit B of the Company's response of October 16, 2008)	\$ 7,487
Employee awards included in Exhibit A of the Company's response of October 16, 2008	\$ 2,266
Equity awards issued pre-Merger for which compensation expense was attributed in 2007	\$ 1,092
Total 2007 share-based compensation	\$ 10,845

The Company is evaluating the Staff's comments to the valuation methods used by the Company for the first and third quarters of 2007 with respect to the compensation expense of certain option grants. Upon resolution of the matters discussed in this response, the Company intends to make a final decision regarding its financial statements.

* * *

Please call the undersigned at the telephone number set forth above or Joseph Magnas at 212-336-4170 with any question or comment you may have regarding the responses set forth herein. In addition, please send all written correspondence directly to the undersigned and Joseph Magnas of Morrison & Foerster LLP, 1290 Avenue of the Americas, New York, New York 10104, teletype 212-468-7900, with copies to David Aviezer, Ph.D., the Company's President and Chief Executive Officer, at 2 Snunit Street, Science Park, P.O.B. 455, Carmiel 20100, Israel, teletype +972-4-988-9489.

Sincerely,

/s/ James R. Tanenbaum

cc: David Aviezer, Ph.D.
Yossi Maimon

Example of the Company's Application of the Straight-Line Method
in connection with the Accounting of Equity Awards Issued to Nonemployees

Assumptions

An award to purchase 100 shares of the Company's common stock to a non-employee that vests in four equal tranches of 25% each at the end of each quarter. The fair value of the award at the end of each of the four quarters is as follows:

End of the first quarter:	\$2.00 per share
End of the second quarter:	\$5.00 per share
End of the third quarter:	\$4.00 per share
End of the fourth quarter:	\$1.00 per share

Expense

The aggregate compensation expense recorded by the Company calculated under the straight-line attribution method is \$300.00. The expense for each quarter is factor of the number of shares that vested as of the quarter multiplied by the fair value per share for the quarter, as follows:

First quarter:	25 shares multiplied by \$2.00 per share = \$50.00
Second quarter:	25 shares multiplied by \$5.00 per share = \$125.00
Third quarter:	25 shares multiplied by \$4.00 per share = \$100.00
Fourth quarter:	25 shares multiplied by \$1.00 per share = \$25.00

Rationale

The illustration above reflects the same expense recognition as if a company had agreed to pay cash for each quarter of service. The Company believes that the EITF 96-18 approach requires the Company to use the then current value of the award as the final measurement. Each period's compensation cost reflects the valuation of the incremental shares earned during that period as the period is completed. The use of a graded attribution methodology would result in the same aggregate compensation cost.

Analysis of all equity issuances in 2007 and 2008—Revisions

<u>Type of grant/ issuance</u>	<u>Number of shares of common stock</u>	<u>Date of grant/ issuance</u>	<u>Fair value used</u>	<u>Measurement date</u>	<u>Trading value on the measurement date</u>	<u>Exercise price</u>	<u>Recipient of grant/ issuance</u>	<u>Post-vesting/ service period restrictions</u>	<u>Amount of compensation recorded for 2007 (in \$1,000s)</u>	<u>Amount of compensation recorded for 2008 (in \$1,000s) [6]</u>
Grant of options[3]	204,351	5/15/2007	\$31.40	5/15/2007	\$ 31.40	\$ 4.33	Employee	None	2,255.00	-145.00
Issuance of restricted shares[4]	8,000	5/15/2007	\$26.99	6/30/2007	\$ 26.99	\$ 0.001	Non-employee	Contractual lockup[5]	11.00	-5.00

[3] Employee terminated in May 2008.

[4] Restricted shares, subject to vesting.

[5] Only a portion such grants are restricted and the restrictions terminate before the term of the options.

[6] For the six-month period ended June 30, 2008.