

October 16, 2008

Mr. Jim Rosenberg
Senior 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 set forth in the Staff's letter to the Company dated October 2, 2008 (the "Comment Letter") to Yossi Maimon, the Company's Chief Financial Officer and Treasurer.

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

Note 5 — Share Capital, page F-20

- 1. On page F-13 you state that the fair value of stock options was determined using the Black-Scholes options pricing model. Please confirm to us that you used this model and tell us the assumptions you used for 2007. Please refer to paragraph A240e.(2) of FAS 123R.**

RESPONSE: The Company hereby confirms that it used the Black-Scholes options-pricing model to determine the fair value of options to purchase shares of its common stock, par value \$.001 per share (the "Common Stock"), granted by the Company in 2007. However, the Company treats the fair value of options granted with an exercise price equal to the par value of the Common Stock ("Par Options") as being equal to the fair value of the Common Stock underlying the options, as discussed below.

Set forth below are the assumptions used by the Company to calculate the fair value of stock options in 2007.

Employees:

The assumptions used for option grants in 2007 are disclosed in Note 5(f)(1)(b) on page F-24 of the financial statements contained in the Form 10-K, as follows:

	<u>2007</u>
Dividend yield	<u>0%</u>
Expected volatility	<u>53%</u>
Risk-free interest rate	<u>4.62%</u>
Expected life — in years	<u>6.0</u>

As discussed in the response to Comment No. 2, there are no restrictions on the transfer of shares of Common Stock underlying the options granted to employees other than the restrictions relating to the transfer of options granted to employees. Accordingly, when the Company determined the value of options under the Black-Scholes options-pricing model, the Company used the expected term of each option which differs from its contractual term and did not apply a discount to the pricing model for options granted to employees.

Non-employees:

During 2007, the Company granted Par Options and restricted shares, which are subject to a vesting schedule (“restricted shares”), to certain non-employees. The Company treats the grant of Par Options as grants of Common Stock. Accordingly, the Company calculated the fair value of the restricted shares and the Par Options to be equal to the fair value of the Common Stock.

2. **We are unable to discern a consistent policy for the measurement date used under 123(R) and EITF 96-18 as well as the valuation methodology used. In order to help us understand these matters, please tell us the nature of the restrictions, and whether or not the restrictions extend beyond the vesting or service period, for the following grants and how the restrictions are reflected in the valuation method (paragraph 17 of 123(R) for employees). Please tell us whether the nature of the restrictions is the same as the trading restrictions on the 99% of outstanding shares of common stock.**

- **Options held by non-employees that vested during the period**
- **Options granted to employees during the period**
- **Restricted common stock held by non-employees that vested during the period**
- **Restricted common stock granted to employees during the period**

RESPONSE: The options and restricted shares granted by the Company were not subject to the same trading restrictions that applied to the 99% of outstanding shares of Common

Stock. Set forth below is a description of the restrictions imposed on the options and restricted shares issued by the Company.

Options held by non-employees that vested during 2007 and restricted common stock held by non-employees that vested during 2007:

Options and shares of Common Stock held by non-employees that vested during 2007 are not subject to any restrictions. Notwithstanding the foregoing, certain securities held by non-employees on December 31, 2006, the date of the merger of Protalix Ltd. with the Company's then wholly-owned subsidiary, Protalix Acquisition Co. Ltd. (the "Merger") are subject to restrictions. In connection with the Merger, substantially all of the former shareholders of Protalix Ltd. entered into lock-up agreements to satisfy Israeli tax laws and certain contractual obligations. The lock-up agreements prohibited such former shareholders of Protalix Ltd. from, directly or indirectly, selling or otherwise transferring the shares of Common Stock issued to them in connection with the Merger (including any shares of Common Stock issuable upon the exercise of outstanding options or warrants) during the period commencing upon the closing of the Merger and ending on January 1, 2009. However, during such period, each such former shareholder of Protalix Ltd. had the option, under the terms of the lock-up agreements and the tax ruling described below, to sell an aggregate of 10% of each such shareholder's original number of locked-up shares. On June 11, 2008, after completing discussions with the Israeli tax authorities regarding a tax ruling regarding the treatment of the Merger under Israeli tax laws, the Company terminated the lock-up agreements for holders of 5% or less of the Company's outstanding shares as of the closing of the Merger.

The Company did not consider these restrictions when it measured the fair value of options and shares of Common Stock held by non-employees that vested during 2007. The Israeli tax authorities imposed these restrictions on the options as a precondition to favorable tax treatment of such considerations. As the holders of the options benefit from the restrictions, the Company determined that the restrictions should not lead to a discount to the fair value of the options.

Options granted to employees during the period:

Options granted to employees, prior to exercise, may not be sold, pledged, assigned, transferred or disposed of in any manner other than by will or by the laws of descent or distribution. In addition, if an employee's continuous service is terminated while an option is unexercised, the employee (or his or her estate or a person who acquired the right to exercise the award by bequest or inheritance) may exercise the portion of the employee's award that was vested as of the date of such termination or such other portion of the employee's award as may be determined by the administrator of the Protalix BioTherapeutics, Inc., 2006 Stock Incentive Plan according to the following post-termination exercise periods (unless the applicable award agreement provides otherwise):

for any reason other than cause, disability or death:

12 months from date of termination

for cause:	14 days from date of termination
for disability:	12 months from date of termination
for death (including the death of the employee during these post-termination exercise periods):	12 months from date of death

Notwithstanding the foregoing, in no event shall an option be exercisable later than the expiration date of the term of the award as set forth in the applicable award agreement. To the extent that an employee's award was unvested at the date of termination, or if the employee does not exercise the vested portion of the employee's award within the time specified in the applicable award agreement, the award shall terminate.

The options are not subject to any additional restrictions other than the vesting conditions.

Restricted common stock granted to employees during the period:

The Company did not issue any restricted shares to employees during the period.

As required by FAS 123R, the Company considered the restrictions discussed herein when valuing options under the Black-Scholes options-pricing model using an expected term for the options that differs from the contractual term of the options.

3. You stated in your disclosure on page 57 that you are using the expected term based on the simplified method. Please address the following:

- **Please tell us if any of the features discussed in footnote 7 of SAB 107A exists, and if not, why you believe using the expected term, which may be shorter than the contractual term, is appropriate. Refer to SAB 107D(2)(Q6).**
- **If there are restrictions on stock that go beyond the vesting or service date, it does not appear that the simplified method is appropriate.**
- **It appears that an option that is "in the money" may have a different expected term than an option that is "at the money", which was one of the prerequisites for using the simplified method for determining the expected term. Please tell us why you believe use of the simplified method is appropriate based on the guidance in SAB 107D(2)(Q6).**

RESPONSE: The disclosure on page 57 of the Form 10-K refers to the use of the simplified method to calculate the expected term of options granted by the Company to employees in 2007. The following is an analysis of the Company's use of the simplified method in connection with options granted to employees in 2007.

As discussed in the response to Comment No. 2, options, prior to exercise, may not be sold, pledged, assigned, transferred or disposed of in any manner other than by will or by the laws of descent or distribution. In addition, as noted in the response to Comment No. 2, the contractual terms of options are subject to early termination in connection with post-vesting service termination. Such features are consistent with the features discussed in Footnote 7 of SAB 107A.

Except as discussed in the response to Comment No. 2, there are no other restrictions on the stock options granted to employees during the period, other than the vesting conditions. In addition, there are no restrictions on the shares of Common Stock issued in connection with the exercise of stock options by employees. As required by FAS 123R, the Company considered the restrictions discussed herein when valuing options under the Black-Scholes options-pricing model using an expected term for the options that differs from the contractual term of the options.

While the Company assumed that the average exercise period for options granted “in the money” would be shorter than the average period between the vesting and the expiration of the options, due to the lack of information regarding exercise behavior, the Company implemented the simplified method for the calculation of the expected period. As indicated in Exhibit B, the Company only made one option grant to an employee during 2007. The grant to an employee in May 2007 of options to purchase 204,351 shares of Common Stock was “in the money,” based on the closing price of the Common Stock on the date of grant. Accordingly, management does not believe that the fair value of the option would be materially different based on a shorter expected term assumption.

4. **Please provide us an analysis, preferably in tabular format, of all equity issuances in 2007 and 2008, the date of grant/ issuance, fair value used, measurement date, trading value on the measurement date, the exercise price, if applicable, recipient of the grant/ issuance (employee/ non-employee and related party/ non-related party), any post-vesting/service period restrictions, and the amount of compensation recorded for each issuance. Please provide a separate table for non-employee issuances/grants in which compensation was recorded based on a vesting date during the period.**

RESPONSE:

Please see [Exhibit A](#) and [Exhibit B](#) attached hereto.

5. **For the first quarter in 2007 you used the quoted market price on the Tel-Aviv Stock Exchange for Bio-Cell rather than Over-the-Counter Bulletin Board (OTCBB) bid/ask because you stated there was insufficient volume on OTCBB. Please address the following:**
- **Tell us if you used the quoted market price on the measurement date or the quoted market price at the end of the quarter (i.e. March 31, 2007)**
 - **We understand your stock was listed on the American Stock Exchange beginning March 12, 2007. Tell us if you had any measurement dates on or**

after this date and if so, why you used Tel-Aviv stock exchange for Bio-Cell instead of the American Stock Exchange for the company.

RESPONSE: During the first quarter of 2007, the Company did not grant any options to employees or non-employees. The only measurement the Company made for the first quarter of 2007 was the final measurement of 175,303 outstanding options held by non-employees that vested at the end of the quarter, and an interim measurement for 35,231 remaining options that were subject to further vesting as of the end of the quarter.

For purposes of the March 30, 2007 measurement date, the Company determined the fair value of outstanding options held by non-employees that vested at the end of the first quarter of 2007 based on the valuation of the Company's largest shareholder, Bio-Cell Ltd. ("Bio-Cell"), an Israeli public company traded on the Tel Aviv Stock Exchange, not on the trading price of the Common Stock reported by the American Stock Exchange (the "AMEX"). As of March 31, 2007, Bio-Cell held approximately 20% of the outstanding shares of Common Stock and did not have any other significant assets other than its interest in the Company.

Fundamentally, while the Company understands that observable transactions in its Common Stock are generally presumed to be the fair value of the Common Stock, it is the Company's belief that the price levels of the Common Stock throughout most of 2007 were not reflective of a reasonable fair value for the Common Stock if one considers all other available evidence relating to the value of the Common Stock. As the Company prepared the financial statements for the first quarter of 2007, it believed that the trading prices reported by the AMEX should not be the exclusive determinant of the fair value of the Common Stock. Rather, in situations like the Company's, in which the trading price of a security is clearly not indicative of its fair value, the Company should consider all available evidence of the fair value of the Common Stock in order to accurately reflect the cost of stock compensation arrangements. The Company believes that the aggregate trading volume of 38,500 shares of Common Stock on the AMEX during the first quarter of 2007 was not sufficient evidence to determine a fair value for transactions involving the 2.1 million shares of Common Stock underlying the stock compensation arrangements. Further, the trading price of the Common Stock on the AMEX was especially not indicative of the market value of the Company's outstanding shares of Common Stock, in the aggregate, if one considers the 65 million shares of Common Stock outstanding (resulting in an implied value of the Company equal to approximately \$2 billion).

In the Company's judgment, there was sufficient activity in the market for Bio-Cell's shares to use as an evidence of the fair value of the Common Stock for the first quarter of 2007. The average daily trading volume of Bio-Cell's shares on the Tel Aviv Stock Exchange was 46,807 shares, with a value of approximately \$500,000 (representing approximately 0.8% of Bio-Cell's market capitalization at the time). As previously reported to the Staff, the fair value of the Common Stock based on the trading activity in Bio-Cell's shares indicated a value of \$6.19 per share for the Common Stock.

6. For the second quarter in 2007 you used the quoted trading value on the American Stock Exchange. Please address the following:

- What considerations you gave to restrictions in determining the fair value.
- Whether or not the quoted trading price was used or if the price was adjusted.
- Tell us if you used the quoted trading price at the measurement date or some other date like the end of the period.

RESPONSE: For purposes of the second quarter of 2007, the Company considered the restrictions described in the response to Comment No. 2 in its determination of the fair value of an option granted to the employee (the Company made only one option grant to an employee during the quarter). The restrictions were considered through the expected life of the option, which differs from its contractual life. In determining the fair value of the outstanding options held by non-employees, there were no restrictions other than the regular vesting and service conditions and the “lock-up” restriction described in the response to Comment No. 2.

During the second quarter, the Company used the trading price of the Company, as reported on the applicable measurement dates by the AMEX. As discussed in the response to Comment 7 below, the Company did not make any adjustment to that market price.

7. For the third quarter in 2007 you used the private placement in the fourth quarter to determine your fair value. Please address the following:

- What considerations you gave to the fact that the trading volume was higher in the third quarter than the second quarter.
- What consideration was given to restrictions in determining the fair value.

RESPONSE: During the third quarter of 2007, the Company did not grant any options or restricted shares. The final measurement of outstanding options held by non-employees that vested at the end of the third quarter and the interim measurement of outstanding, unvested options held by non-employees was made as of the end of the third quarter of 2007 based on the offering price of the underwritten public offering consummated by the Company on October 25, 2007.

On October 25, 2007, the Company consummated an underwritten public offering of 10 million shares of Common Stock at a price per share equal to \$5.00. The shares were registered on a registration statement on Form S-3 which was declared effective on September 24, 2007. The offering included a road show which started shortly after the end of the third quarter of 2007. It became clear towards the end of third quarter as the Company and the underwriters commenced preparations for the offering that the price per share of the offering would be significantly less than the quoted market price of the Common Stock (the closing price of the Common Stock was \$34.56 on September 28, 2007, the last trading day of the third quarter of 2007).

The trading price of the Common Stock on the AMEX remained exceptionally high until the day prior to the underwriting (the closing price of the Common Stock was \$36.36 on October 24, 2007). While the volume during the third quarter was significantly higher than the volume during the first and second quarters, management continued to believe that the volume was relatively low when compared to the amount of outstanding shares of Common Stock. Accordingly, the Company maintained its position that the trading price on the AMEX was not indicative of the fair value of the Common Stock. The pricing of the Common Stock in the underwritten offering confirmed management's view and, in the Company's judgment, was more reflective of the fair value of the Common Stock than the trading price on the AMEX. With respect to the second quarter of 2007, there were no comparable transactions that could provide the Company with an indication of the fair value of the Common Stock that could be deemed better than the trading prices reported by the AMEX. Therefore, in the Company's judgment, the Company was compelled to use the trading price of the Common Stock on the AMEX to calculate its fair value for the second quarter of 2007. Please note that the indicative value of the Common Stock based on the traded price of Bio-Cell at the end of the third quarter was approximately \$9.00 per share which provides additional support for the Company's position that the trading prices of the Common Stock on the AMEX could not be relied upon to establish the fair value of the Common Stock.

The Company's only measurement date for the third quarter of 2007 was as of the end of the quarter in connection with the measurement of 175,302 outstanding Par Options held by non-employees that vested at the end of the third quarter and the interim measurement of 35,231 outstanding, unvested options held by non-employees. As explained herein, options held by non-employees were subject to no restrictions other than the vesting periods (except for the "lock-up" feature explained in the response to Comment No. 2), and, therefore, restrictions were not taken into consideration in the interim measurement of these options.

8. **For the fourth quarter in 2007 you used the quoted trading price on December 31, 2007. Tell us if there were issuances/grants or vested equity issuances other than on December 31, 2007 and why the measurement date was not used for those.**

RESPONSE: The Company issued a single grant of 8,000 options to a non-employee during the fourth quarter of 2007, which options were subject to a vesting schedule. Thus, the only measurement required for the fourth quarter related to the 175,302 outstanding Par Options held by non-employees that vested at the end of the quarter, and the interim measurement of 132,871 outstanding, unvested options held by non-employees.

9. **Tell us what methodology you used for stock compensation in the first and second quarter of 2008 addressing the above concerns as applicable.**

RESPONSE: The Company used the closing prices reported by the AMEX on the applicable measurement dates to calculate the fair value of grants made during the first quarter of 2008. The Company did not issue any stock options during the second quarter of 2008. Although not all of the features mentioned in SAB 107D(2)(Q6), existed with

respect to such options, since the options were out of the money, the Company used the simplified method to calculate the expected life of the options that were granted during the first quarter of 2008. Management does not believe that the fair value of the options would be materially different based on a contractual term assumption. For purposes of calculating the fair value of outstanding options held by non-employees that vested during each of the first and second quarters of 2008, the Company used the closing price of the Common Stock on the applicable measurement date. As discussed above, Par Options granted to non employees were treated as shares of Common Stock. Accordingly, the expected terms of such options are irrelevant.

- 10. You use the terminology “the appropriate date” on page 57 and in Note 5 to the financial statements when referring to the date in which you used for determining fair value. Your response letter implied that you may have used the date at the end of the quarter, which may differ from the measurement date. Please confirm that you are referring to the measurement date as discussed in SFAS 123R and EITF 96-18 and revise your wording accordingly or tell us why the measurement date has not been used.**

RESPONSE: The Company used the measurement dates that are discussed in FAS 123R and EITF 96-18 for purposes of valuing options granted to employees and non-employees. The wording “the appropriate date” on page 57 of the Form 10-K and in Note 5 to the financial statements contained therein refers to the applicable measurement date for outstanding options held by employees (the grant date), and the interim or final measurement date for options granted to non-employees (the end of the quarter or the vesting date when vesting differs from the end of the quarter). In future filings, the Company will use language that is more specific.

* * *

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, telecopy 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, telecopy +972-4-988-9489.

Sincerely,

/s/ James R. Tanenbaum

cc: David Aviezer, Ph.D.
Yossi Maimon

Analysis of all equity issuances in 2007 and 2008

Type of grant/issuance	Number of shares of common stock	Date of grant/issuance	Fair value used	Measurement date	Trading value on the measurement date	Exercise price	Recipient of grant/issuance	Post-vesting/service period restrictions	Amount of compensation recorded for 2007 (in \$1,000s)	Amount of compensation recorded for 2008 (in \$1,000s)
Common stock upon exercise of warrants[1]	3,875,416	1/30/2007	NA	NA	NA	\$ 1.37	[2]	NA	NA	NA
Grant of options[3]	204,351	5/15/2007	\$ 26.99	5/15/2007	\$ 26.99	\$ 4.33	Employee	None	2,255.00	-145.00
Issuance of restricted shares[4]	8,000	5/15/2007	\$ 31.40	5/15/2007	\$ 31.40	\$ 0.001	Non-employee	Contractual lockup [5]	11.00	-5.00
Issuance of shares of common stock	10,000,000	10/25/2007	NA	10/25/2007	\$ 6.31	NA	NA	None	NA	NA
Grant of options	8,000	11/13/2007	\$ 4.90	11/13/2007	\$ 4.90	\$ 0.001	Non-employee	None	[6]	4.00
Grant of options	550,000	2/7/2008	\$ 3.02	2/7/2008	\$ 3.02	\$ 5.00	Employee	None	0.00	409.00
Grant of options	1,350,000	2/7/2008	\$ 3.02	2/7/2008	\$ 3.02	\$ 5.00	Employee	None	0.00	482.00
Grant of options	50,000	2/7/2008	\$ 3.02	2/7/2008	\$ 3.02	\$ 3.02	Employee	None	0.00	32.00

[1] Exercise of warrants granted on December 31, 2006 in connection with the merger.

[2] Two of the warrant holders were directors and one of the warrant holders was a consultant to the Company as of the date of exercise.

[3] Employee terminated in 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] Represents less than \$1,000.

Issuances/grants to non-employees based on vesting date during the period

	Date of grant/issuance	Fair value used(\$)	Measurement date	Trading value on the measurement date	Exercise price (\$)	Recipient of grant/issuance	Post vesting/service period restrictions [1]	Total expense for 2007 (in \$1,000s)	Total expense for 2008 (in \$1,000s)
Grant of 1,753,027 options	12/31/2006	\$ 6.19	3/31/2007	\$ 31.32	\$ 0.001	Related party	Contractual lockup		
		\$ 26.99	6/30/2007	\$ 26.99					
		\$ 5.00	9/30/2007	\$ 34.56					
		\$ 3.40	12/31/2007	\$ 3.40					
		\$ 2.63	3/31/2008	\$ 2.63					
		\$ 2.71	6/30/2008	\$ 2.71					
							\$ 7,289	\$ 936	
Grant of 387,542 options	12/31/2006	\$ 6.19	3/31/2007	\$ 31.32	\$ 16.70	Non-employee	Contractual lockup		
		\$ 26.99	6/30/2007	\$ 26.99					
		\$ 5.00	9/30/2007	\$ 34.56					
		\$ 3.40	12/31/2007	\$ 3.40					
		\$ 2.63	3/31/2008	\$ 2.63					
		\$ 2.71	6/30/2008	\$ 2.71					
							\$ 187	\$ 103	
Grant of 8,000 restricted shares	5/15/2007	\$ 26.99	6/30/2007	\$ 26.99	\$ 0.001	Non-employee	Contractual lockup		
		\$ 5.00	9/30/2007	\$ 34.56					
		\$ 3.40	12/31/2007	\$ 3.40					
		\$ 2.63	3/31/2008	\$ 2.63					
		\$ 2.71	6/30/2008	\$ 2.71					

[1] Represents restrictions for only a portion of such grants and for only a certain period.