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July 11, 2008

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Ms. Vanessa Robertson
Staff 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 June 26, 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.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Results of Operations, page 58
Research and Development Expenses

1. We believe that your disclosures about historical research and development expenses and estimated future expenses related to your major research and development projects could be enhanced for investors. Please refer to the Division of Corporation Finance "Current issues and Rulemaking Projects Quarterly Update" under section VIII – Industry Specific Issues – Accounting and Disclosure by Companies Engaged in Research and Development Activities. You can find it at the following website address: http://www.sec.gov/divisions

/corpfin/cfcrq032001.htm. Please revise your MD&A to disclose the following information for each of your major research and development projects.

a. **The current status of the project;**

b. **The costs incurred during each period presented and to date on each project;**

c. **The nature, timing and estimated costs of the efforts necessary to complete each project;**

d. **The anticipated completion dates of each project;**

e. **The risks and uncertainties associated with completing development on schedule, and the consequences to operations, financial position and liquidity if each project is not completed timely; and finally**

f. **The period in which material net cash inflows from significant projects are expected to commence for each project.**

Regarding b., if you do not maintain any research and development costs by project, disclose that fact and explain why management does not maintain and evaluate research and development costs by project. Provide other quantitative or qualitative disclosure that indicates the amount of the company's resources being used on the project.

Regarding c. and d., disclose the amount or range of estimated costs and timing to complete the phase in process and each future phase. To the extent that information is not estimable, disclose those facts and circumstances indicating the uncertainties that preclude you from making a reasonable estimate.

Response: The majority of the Company's research and development expenses are currently incurred in connection with the phase III clinical trial of the Company's lead product candidate, prGCD for the treatment of Gaucher disease. As disclosed in the Form 10-K, the Company is also engaged in the research and development of three other projects, each of which is in the research stage. When compared to the expenditures for the research and development of prGCD, the Company believes that the expenditures for the other research and development projects are immaterial to the business and prospects of the Company. For such reasons, the Company does not record and maintain research and development costs on a per project basis. In addition, due to the inherently unpredictable nature of the preclinical and clinical development process, the Company is not able to estimate the future costs of any of its research and development projects with any certainty, nor is the Company able to predict the timing or receipt of net cash inflows for any project, if any. Based upon the foregoing, the Company believes that it has disclosed the appropriate information regarding its research and development expenses in the Management's Discussion and Analysis of Financial Condition and Results of Operations (the "MD&A") section of the 10-K.

Based upon the Staff's comment, the Company intends to structure the Research and Development Expense subsection in the MD&A

section of future annual reports in a manner similar to model disclosure set forth on Exhibit A.

Report of Independent Registered Public Accounting Firm, page F-2

2. **Auditor association with the cumulative data is required on an annual basis as long as the registrant is in the development stage. There is no reference to the cumulative data in the accountant's report. In addition, it does not appear as though a waiver for this requirement was granted by the Office of the Chief Accountant within the Division of Corporation Finance. Please advise whether a waiver was obtained and provide us a copy or include the appropriate accountant report. To be granted a waiver it must be impracticable for you to obtain an audit opinion on the cumulative data. A written submission explaining why it is impracticable must be provided to the Office of the Chief Accountant within the Division of Corporation Finance to obtain a waiver.**

RESPONSE: The omission of the reference to the cumulative data in the Report of the Independent Registered Accounting Firm included in the Company's Financial Statements for the fiscal year ended December 31, 2007 is due to a typographical error. The Company's accountants provided an opinion on the cumulative data in their report for the 2006 financial statements and intended to include the cumulative data in the 2007 integrated audit opinion. A copy of the corrected Report of the Independent Registered Accounting Firm included in the Company's Financial Statements for the fiscal year ended December 31, 2007 is attached hereto as Exhibit B.

Note 4 — Commitments, page F-18

3. **Please revise your disclosure to include all of the milestone payments you will be required to pay under certain research and license agreements. Please include the events that would trigger these payments. Also tell us why you did not include these amounts in your contractual obligation table. Finally, please include the length of and the termination provisions for all of your material agreements.**

RESPONSE: As discussed with the Staff, most of the payments under the Company's research and license agreements are in the form of royalties on the net sales of an approved product, if any. There are few provisions in such agreements which obligate the Company or its wholly-owned subsidiary, Protalix Ltd., to make milestone payments or other similar payments other than the royalties. The Company believes that the amounts of these payments, individually and in the aggregate, are immaterial to the business and prospects of the Company due to the relatively small amounts of the payments, the contingent nature of the payments, the fact that certain of the payments are payable in the future and the fact that certain of the payments are creditable against future royalty payments.

For the foregoing reasons, the Company does not believe that additional disclosure regarding the milestone payments and other payments is necessary for the protection of

investors. Such payments, if all of the contingencies are met, amount to approximately $1.3 million and would be payable, if at all, as the Company's projects progress over the course of a number of years. In addition, the Commission has previously granted confidential treatment for the amount and timing of all such payments. For the same reasons, the Company did not include any of the payments in the contractual obligation table set forth in the MD&A section of the Form 10-K.

Based upon the Staff's comments, the Company intends to include disclosure regarding the aggregate amount of the milestone and other payments in the financial statements it prepares in future annual reports. Also, to the extent applicable, the Company intends to include disclosure regarding the length of and termination provisions of its research and license agreements in the financial statements it prepares in future annual reports.

4. Please explain how the $1,724,000 commitment under your sub-contracting agreements relates to the purchase obligations of $4,086,000 included in your contractual obligations table.

RESPONSE: The purchase obligations of approximately $4,086,000 disclosed in the contractual obligation table in the MD&A of the Form 10-K includes the Company's commitments of approximately $1,724,000, as of December 31, 2007, under certain of the Company's research and development agreements as disclosed in Note 4 of the Company's Financial Statements for the fiscal year ended December 31, 2007. The remaining approximately $2,362,000 disclosed in the contractual obligation table represents open purchase orders which the Company had issued to certain suppliers and other vendors that were outstanding as of December 31, 2007.

Note 5—Share Capital, page F-20

5. Please provide us a chronology of facts, circumstances and events explaining the change in fair value of the common stock issued during 2006 of approximately $1.50 per share to the trading value immediately after the merger of approximately $27 per share.

RESPONSE: As discussed in Note 5(b) of the Company's Financial Statements for the fiscal year ended December 31, 2007, the description of share capital in the Company's historical financial statements reflects the historical financial statements of Protalix Ltd., and have been retroactively restated to reflect the implicit conversion ratio related to the exchange of ordinary shares of Protalix Ltd. for shares of the Company's common stock, par value $.001 per share (the "Common Stock"), in connection with the merger of the Company with a wholly-owned subsidiary of the Company, which was consummated on December 31, 2006 (the "Merger"). In August 2006, Protalix Ltd. sold 163,774 of its ordinary shares to investors for aggregate proceeds equal to $15,000,000 or $91.59 per ordinary share. On the same date, Protalix Ltd. entered into a merger agreement with the Company and a wholly-owned subsidiary of the Company. After giving retroactive effect to the conversion ratio in the Merger, which was approximately 1 for 61.08, the offering was conducted at approximately $1.50 per share (after giving effect to the 10-

for-1 reverse stock split which went into effect on December 29, 2006, as discussed below (the "Reverse Stock Split")).

On August 21, 2006, the closing price of the Common Stock quoted on the OTC Bulletin Board® (the "OTCBB") was $3.90 per share (which is a pre-Reverse Stock Split number). From August 22, 2006 through December 29, 2006, the closing price of the Common Stock declined to $1.67 per share (which is a pre-Reverse Stock Split number) with very low volume. On many days during such period, there was no trading in the Common Stock at all. In connection with the closing of the Merger, the Company completed a 10-for-1 reverse stock split on December 29, 2006. Accordingly, on January 3, 2007, the first trading day after the effective date of the Reverse Stock Split and the closing of the Merger, the opening price of the Common Stock, as quoted on the OTCBB, was $14.00 per share. The closing price of the Common Stock on that date was $27 per share. All of the corporate events discussed in this response have been disclosed by the Company in either the Form 10-K or in other filings made with the Commission. All of the Company's officers and directors entered into lock-up agreements in connection with the Merger and were restricted from selling more than 10% of their holdings in the Company. To the Company's knowledge, none of the Company's officers or directors sold any shares of Common Stock during fiscal year 2007.

6. You state in Note 5 and on pages 56-57 that you used various methods to determine the fair value of your common stock. It appears as though your stock was trading prior to the March 12, 2007 date that it was listed on the American Stock Exchange. In addition, it appears you used the $5 per share offering price in October 2007 to value equity issuances granted before that including for issuances during the third quarter ended September 30, 2007 even though there was a trading price of your stock during that period. Please tell us how your use of valuation methods during the first and third quarters of 2007 rather than the trading price of your stock to value equity issuances for compensation expense/consulting expense, etc. complies with FAS 123R.

RESPONSE: Prior to March 12, 2007, the Common Stock was quoted on the OTCBB. On March 12, 2007, the Common Stock was accepted for listing on the American Stock Exchange (the "AMEX"). During the quarter ended March 31, 2007 (the "First Quarter"), more than 99% of the outstanding shares of Common Stock were restricted or otherwise subject to contractual lock-up agreements, and were not available for sale in the public market, the number of trades in the public market were infrequent and the average daily volume was very low. The average daily trading volume of the Common Stock during the First Quarter was 983 shares, with a value of approximately $22,000 (representing approximately 0.001% of the Company's market capitalization at the time). There were 22 days during the First Quarter in which there were no trades of the Common Stock at all. During the First Quarter, the closing price of the Common Stock ranged from $15.75 to $31.32, reflecting market capitalizations well in excess of the valuation of Protalix Ltd. prior to the Merger. The Company does not believe that there was any business or clinical development justifying the increase in its valuation. In preparing its quarterly financial statements for the First Quarter, the Company determined

that it was not appropriate to use the quoted price of the Common Stock to establish the fair value of the options granted to the Company's consultants and non-employees because the prices quoted did not reflect an active market for the Common Stock. In lieu of the prices quoted on the OTCBB, and later reported by the AMEX, the fair value was established by the Company's management in good faith, based on a retrospective valuation of the fair value of the Common Stock at the end of the First Quarter and in consultation with a third-party specialist. The Company decided that too much time had passed since the last financing by Protalix Ltd. in August 2006 for the Company to use the valuation to calculate fair value. Rather, the Company based its valuation on the valuation of Bio-Cell Ltd., an Israeli public company traded on the Tel-Aviv Stock Exchange ("Bio-Cell"). As of March 31, 2007, Bio-Cell held approximately 20% of the outstanding shares of the Company's Common Stock and did not have any other significant assets other than its interest in the Company. The Company's management took the position that there was an active market in Bio-Cell's shares as 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). Based on the above, the fair value of the Common Stock underlying the options granted to consultants and non-employees established by the Company was $6.19 per share as of the end of the First Quarter (reflecting an aggregate market value of the Company of approximately $460 million).

The Common Stock of the Company was listed for trading on the AMEX for the entire quarter ended June 30, 2007 (the "Second Quarter"). The trading volume of the Common Stock during the Second Quarter was well in excess of the volume for the First Quarter with an average daily trading volume of 35,356 shares a day and with a value of approximately $1 million. With an active market available to determine the fair value of the Common Stock, the Company used the prices reported by the AMEX to determine the fair value of the Common Stock underlying the outstanding options and shares of restricted common stock held by employees and non-employees.

During the quarter ended September 30, 2007 (the "Third Quarter"), the Common Stock traded at relatively higher volumes, with an average daily volume of 103,225 shares of Common Stock, at approximately $3 million. However, more than 99% of the outstanding shares of Common Stock were still subject to trading restrictions. During the Third Quarter, the Common Stock continued to trade at price levels that reflected a market capitalization far in excess of the valuation of Protalix Ltd. prior to the Merger. During the second quarter, the Company achieved certain milestones, such as approval from the United States Food and Drug Administration to commence a phase III clinical trial of prGCD during the Third Quarter. However, the Company did not believe that the market capitalization reflected the fair value of the Company. On October 25, 2007, the Company completed an underwritten public offering of 10,000,000 shares of Common Stock in an underwritten public offering at a price equal to $5.00 per share. The offering was underwritten by UBS Securities LLC and CIBC World Markets Corp. (now Oppenheimer).

In preparing its quarterly financial statements for the Third Quarter, the Company's management determined that the price per share established in the underwritten offering was more reflective of the fair value of the Common Stock than the trading prices of the Common Stock reported by the AMEX. Accordingly, the Company's management used $5.00 per share as the fair value of the Common Stock underlying the outstanding options and shares of restricted common stock held by non-employees that vested during the Third Quarter.

For purposes of determining the fair value of the Common Stock underlying the outstanding options and shares of restricted common stock held by non-employees that vested after the Third Quarter, management has used the closing sale price of the Common Stock reported by the AMEX. The closing price of the Common Stock on December 31, 2007 was $3.40 per share.

FAS 123R principally requires the use of the "fair-value-based method" for measuring the value of stock-based compensation. Generally, the reported market prices of securities that are traded on a national securities exchange or the Nasdaq are the most reliable measure of the fair value of such securities. Accordingly, a company that is traded on a national stock exchange will fix the value of its common stock, or options to acquire shares of its common stock, based on the prices reported by the applicable exchange, typically the closing price of the common stock on the valuation date. However, the prices reported by the exchanges are not the exclusive determinant of the fair value of a security. In certain situations, the fair value of common stock is not readily determinable by reference to the prices reported by the applicable exchange, or Nasdaq. As discussed herein, the Company's management determined that, for purposes of the First Quarter and the Third Quarter, it was not appropriate to base the fair value of the Common Stock underlying the outstanding options and shares of restricted common stock held by non-employees on the last sales price of the Common Stock on the applicable valuation date, as reported by the AMEX. For the reasons set forth herein, the Company's decision complied with FAS 123R.

* * *

Please note that the Company has authorized us to inform you that it acknowledges that the Company is responsible for the adequacy and accuracy of the disclosure in the filing; that Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and that the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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

Exhibit A

Research and Development Expense Model Disclosure

Research and Development Expense

We expect our research and development expense to increase as we continue to develop our product candidates. Research and development expense consists of:

- internal costs associated with research and development activities;
- payments made to third party contract research organizations, contract manufacturers, investigative sites and consultants;
- manufacturing development costs;
- personnel-related expenses, including salaries, benefits, travel, and related costs for the personnel involved in research and development;
- activities relating to the advancement of product candidates through preclinical studies and clinical trials; and
- facilities and other allocated expenses, which include direct and allocated expenses for rent and maintenance of facilities, as well as laboratory and other supplies.

The following table identifies our current major research and development projects:

Project	Status	Expected Near Term Milestone
prGCD for the treatment of Gaucher disease	Phase III	TBD
PRX 102 — alpha Galactosidase enzyme	Research	TBD
Acetylcholinesterase	Research	TBD
PRX 111 — Follicle Stimulating Hormone (FSH)	Research	TBD

All of our projects, other than our phase III clinical trial of prGCD, are in the research phase with relatively immaterial costs. Most of our research and development costs are incurred in connection with our phase III clinical trial of prGCD. Our internal resources, employees and infrastructure are not tied to any individual research project and are typically deployed across all of our projects. We currently do not record and maintain research and development costs per project.

The costs and expenses of our projects are partially funded by grants we have received from the OCS. Each grant is deducted from the related research and development expenses as the costs are incurred. For additional information regarding the grant process, see “Business—Israeli Government Programs—Encouragement of Industrial Research and Development Law, 1984” in Item 1 of this Annual Report. There can be no assurance that we will continue to receive grants from the OCS in amounts sufficient for our operations, if at all.

At this time, due to the inherently unpredictable nature of preclinical and clinical development processes and given the early stage of our preclinical product development programs, we are unable to estimate with any certainty the costs we will incur in the continued development of the product candidates in our pipeline for potential commercialization. Clinical development timelines, the probability of success and development costs can differ materially from expectations. While we are currently focused on advancing each of our product development programs, our future research and development expenses will depend on the clinical success of each product candidate, as well as ongoing assessments of each product candidate’s commercial potential. In addition, we cannot forecast with any degree of certainty which product candidates may be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements. See “Risk Factors—All of our product candidates other than prGCD are in research stages. If we are unable to develop and commercialize our other product candidates, our business will be adversely affected” and “—We may not obtain the necessary U.S. or worldwide regulatory approvals to commercialize our drug candidates in a timely manner, if at all, which would have a material adverse effect on our business and results of operations.”

We expect our research and development expenses to increase in the future as we continue the advancement of our clinical trials and preclinical product development programs. The lengthy process of completing clinical trials and seeking regulatory approval for our product candidates requires expenditure of substantial resources. Any failure or delay in completing clinical trials, or in obtaining regulatory approvals, could cause a delay in generating product revenue and cause our research and development expense to increase and, in turn, have a material adverse effect on our operations. If the phase III clinical trial or prGCD produces favorable results, we expect to file a New Drug Application, an NDA, for prGCD with the FDA by the end of the first half of 2009. Because of the factors set forth above, we are not able to estimate with any certainty when we would recognize any net cash inflows from our projects. See "Risk Factors—Clinical trials are very expensive, time-consuming and difficult to design and implement and may result in unforeseen costs which may have a material adverse effect on our business and results of operations."

Exhibit B

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders of

PROTALIX BIOTHERAPEUTICS, INC.

(A Development stage company)

In our opinion, the consolidated balance sheets and the related statements of operations, changes in shareholders' equity and cash flows present fairly, in all material respects, the financial position of Protalix BioTherapeutics, Inc. and its subsidiary (a development stage enterprise) at December 31, 2007 and 2006, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2007 and for the period from December 27, 1993 (date of Company's incorporation) through December 31, 2007 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2007, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying **"***Management Report on Internal Control over Financial Reporting***"** appearing under Item 9A. Our responsibility is to express opinions on these financial statements, on the Company's internal control over financial reporting based on our audits (which was an integrated audit in 2007). We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As discussed in note 1L effective January 1, 2006, the Company changed its method of accounting for share-based payment to conform with FASB Statement of Financial Accounting Standards No. 123 (revised 2004), “Share-based Payment”.

Tel-Aviv, Israel
March 14, 2008

Kesselman & Kesselman
Certified Public Accountant (Isr.)
A member of PricewaterhouseCoopers
International Limited