



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

December 21, 2010

Mr. Robert Andrade
Chief Financial Officer
Adherex Technologies, Inc.
501 Eastowne Drive, Suite 140
Chapel Hill, NC 27514

**Re: Adherex Technologies, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2010
Definitive Proxy Statement on Schedule 14A
Forms 10-Q for Quarterly Periods Ended March 31, 2010, June 30, 2010
and September 30, 2010
File No. 001-32295**

Dear Mr. Andrade:

We have reviewed your filings and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filings, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe a comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response. Please furnish us a letter on EDGAR under the form type label CORRESP that keys your responses to our comments

After reviewing any amendment to your filings and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Year Ended December 31, 2009

Item 1. Business

Corporate Relationships, page 4

1. Please revise your disclosure that would expand your description of the development and license agreement with GlaxoSmithKline (GSK) in order to describe the term and termination provisions. Also, please disclose the range of royalties that you may be required to pay GSK.

Item 9A. Controls and Procedures

Management's Report on Internal Control over Financial Reporting, page 29

2. Your disclosure appears to repeat your conclusion on the effectiveness of your disclosure controls and procedures. Also Management's Report does not contain all of the language required by Item 308T(a) of Regulation S-K. Please revise to include the following:
 - A statement of management's responsibility for establishing and maintaining adequate internal control over financial reporting that refers to the correct Exchange Act Rules;
 - A statement identifying the framework used by management to evaluate the effectiveness of your internal control over financial reporting; and,
 - Management's assessment of the effectiveness of your internal control over financial reporting as of the end of your most recent fiscal year, including a statement as to whether or not internal control over financial reporting is effective.

3. Please tell us why management's failure to provide a complete report on internal control over financial reporting does not impact its conclusion regarding the effectiveness of the company's disclosure controls and procedures as of the end of the fiscal year.

Exhibits 31.1 and 31.2

4. Please revise your certifications provided in your Form 10-K and your first and second quarter fiscal 2010 Forms 10-Q to be worded exactly as required by Item 601(b)(31) of Regulation S-K. In this regard, please ensure you address the following items:
 - Refer to paragraph 3 where you refer to "this quarterly report". Remove the report descriptions "annual" or "quarterly," as appropriate, from all certifications except for the first paragraph.
 - Include the language related to internal controls over financial reporting in the introductory section of paragraph 4.
 - Revise the parenthetical language in paragraph 4d to refer to the "fourth quarter" in the case of an annual report and not the "third quarter."

Definitive Proxy Statement on Schedule 14A

Ordinary Matters, page 7

5. Please revise your disclosure describing for each director the particular experience, skills, qualifications and attributes that led you to conclude that each of the directors should serve on your Board. See Item 401(e)(1) of Regulation S-K.

6. Please revise your disclosure that complies with the requirements of Item 407(h) of Regulation S-K. Specifically, please state why you have chosen to separate the positions of Chairman of the Board of Directors and Chief Executive Officer and why it is you believe this leadership structure is the most appropriate one for you at this time. In

addition, please provide a description of how your Board administers its risk oversight function, e.g. whether it does so directly or by acting through one of its committees. The mandate of the Board of Directors that is included as Exhibit A to your proxy statement is not specific on this point.

Form 10-Q for the Quarterly Period Ended March 31, 2010, as amended

7. Your explanatory note discloses the amendment was filed solely to reflect that it has been reviewed by your independent auditors. However, Note 2 to the interim financial statements and the Cautionary Statement in MD&A states that the Company's independent auditor has not performed a review of these financial statements. Please amend your filing to remove this language in Note 2 and in MD&A. Also, since you have stated that the interim financial statements have been reviewed by an independent public accountant, a report of the accountant on the review must be filed with the interim financial statements. Refer to Rule 8-03 of Regulation S-X and your requirement to file Exhibit 15 if the review report included in the Form 10-Q is incorporated by reference into a registration statement.

Form 10-Q for Quarterly Period Ended June 30, 2010

Item 4. Controls and Procedures, page 19

8. You state that "we have evaluated the effectiveness of our disclosure controls and procedures..." and, "based on that evaluation, our Chief Executive Officer and Chief Financial Officer have identified two material weaknesses in our internal control over financial reporting..." Based on this disclosure it appears your Chief Executive Officer and Chief Financial Officer have concluded that your disclosure controls and procedures are not effective as of the end of the period covered by this report but you have not stated this conclusion in your disclosure. Please revise your disclosure to provide management's conclusion on the effectiveness of your disclosure controls and procedures as required by Item 307 of Regulation S-K. This comment also applies to your disclosure in your Form 10-Q for the quarterly period ended September 30, 2010.
9. You also disclose that you do not expect to be able to provide remedial actions for your internal control weaknesses until you secure additional financial resources. Please tell us what remedial actions you have undertaken to date and clarify why additional financial resources are necessary beyond those from the private placement in April 2010 in order implement remedial actions.
10. Further, it appears that these weaknesses in your internal control over financial reporting have existed prior to June 30, 2010. Please explain to us why management believes that your disclosure controls and procedures were effective at December 31, 2009 and March 31, 2010 considering the incomplete management annual report on internal control over financial reporting and the Item 4.02 Form 8-K.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and

its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- 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
- 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.

You may contact Christine Allen, Staff Accountant at (202) 551-3652 or Donald Abbott, Senior Staff Accountant at (202) 551-3608 if you have questions regarding the processing of your response as well as any questions regarding comments on the financial statements and related matters. Please contact Scott Foley, Staff Attorney at (202) 551-3383 or Sebastian Gomez Abero, Senior Staff Attorney at (202) 551-3578 with questions on any of the other comments. In this regard, do not hesitate to contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief
Accountant