



DIVISION OF
CORPORATION FINANCE

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

February 1, 2011

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 January 12, 2011 response to our December 21, 2010 letter and have the following comments.

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. We note your response to our prior comment one, specifically the fact that you may be required to pay royalties to GSK. Please expand your proposed disclosure to describe the potential range of royalty payments you may be required to make (e.g., "low-single-digits", "high-single-digits" or a range not to exceed ten percent).

Item 9A. Controls and Procedures

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

2. In your response to prior comment two you state that management has concluded in its assessment of internal control over financial reporting that your internal control procedures, as of December 31, 2009, were effective. The material weaknesses disclosed in your June 30, 2010 Form 10-Q appears to indicate that the same material weaknesses may have existed at December 31, 2009 and March 31, 2010. Please explain to us how the lack of sufficient staff to segregate accounting duties and the lack of sufficient personnel with an appropriate level of technical accounting knowledge, experience, and training in the application of U.S. GAAP that existed at June 30, 2010 were not present at December 31, 2009 and March 31, 2010. Please tell us the factors you considered and highlight for us those factors that support your conclusion. Alternatively, in your amended Form 10-K disclose management's revised conclusion on the effectiveness of your internal control over financial reporting, i.e., not effective as of the end of the fiscal year, and provide disclosure of material weaknesses in internal control over financial reporting that existed as of the end of the fiscal year.

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

Item 4. Controls and Procedures, page 19

3. Consistent with your response to prior comment nine disclose the remedial actions taken to date, alert investors that additional funds are needed to remedy the internal control weaknesses beyond the April 2010 private placement, and that you anticipate hiring additional personnel once you secure additional financing.
4. In your response to prior comment ten you state that management's conclusion on the effectiveness of our disclosure controls and procedures for the March 31, 2010 Form 10-Q was not impacted by the restatement during the quarter ended June 30, 2010. However, as previously noted in this letter, it appears that the same weaknesses in internal control over financial report also existed at December 31, 2009 and March 31, 2010. Also, there appears to be additional disclosure deficiencies that existed at March 31, 2010, such as the original March 31, 2010 Form 10-Q contained financial statements that were not reviewed by the independent auditors and the amendment filed to reflect that the Form 10-Q had been reviewed by the independent auditors continued to state in MD&A and in the notes to the financial statements that the Company's independent auditor has not performed a review of these financial statements. Please tell us the factors you considered and highlight for us those factors that support your conclusion that your disclosure controls and procedures were effective at March 31, 2010. Alternatively, in your amended March 31, 2010 Form 10-Q disclose management's revised conclusion on the effectiveness of your disclosure controls and procedures, i.e., that they were not effective as of the end of the fiscal quarter.

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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, 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