



February 2, 2011

Ms. Christine Allen  
Staff Accountant  
United States Securities and Exchange Commission  
Division of Corporation Finance  
100 F Street, N. E.  
Washington, D.C. 20549

RE: Adherex Technologies, Inc.  
10-K for the Year Ended December 31, 2009  
Definitive Proxy Statement on Schedule 14A  
Form 10Qs for Quarterly Periods Ended March 31, 2010, June 30, 2010 and September 30, 2010  
File No. 001-32295

Dear Ms. Allen:

This letter responds to the February 1, 2011 comments (the "Staff Letter") of the staff ("Staff") of the United States Securities and Exchange Commission (the "Commission") to Adherex Technologies, Inc.'s ("the Company" or "us") filings of Form 10-K for Fiscal Year Ended December 31, 2009, Definitive Proxy Statement on Schedule 14A, Forms 10-Q for Quarterly Periods Ended March 31, 2010, June 30, 2010 and September 30, 2010.

To facilitate the Staff's review, we have set forth below the comments contained in the Staff Letter and, in italics set forth immediate following the comment, our response thereto.

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

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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).

*We will amend our Form 10-K for the fiscal year ended December 31, 2009 to expand our description described in our January 12, 2011 correspondence to include the low-double digit potential range of royalties to GSK.*

Item 9A. Controls and Procedures

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

2. In your response to our 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 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.

*In our amended Form 10-K for the year ended December 31, 2009 we will disclose management's revised conclusion that our internal control over financial reporting was not effective as of the end of the fiscal year as a result of the existence at December 31, 2009 of the same material weaknesses previously disclosed in our June 30, 2010 Form 10-Q.*

Form 10-Q for the 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.

*We will include disclosure in our amended Form 10-Q for the Quarterly Period Ended June 30, 2010 consistent with our response to prior comment nine to the effect that additional funds are needed to remedy the internal control weaknesses beyond the April 2010 private placement and that we anticipate hiring additional personnel once we secure additional financing. We will also include this disclosure in our amended Form 10-Q for the Quarterly Period ended September 30, 2010.*

4. In your response to prior comment ten you state that management's conclusions 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 reporting 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 the 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.

*In our amended Form 10-Q for the period ended March 31, 2010 we will include management's revised conclusion that our disclosure controls and procedures were not effective as of the end of the fiscal quarter as a result of the existence as of March 31, 2010 of the same material weaknesses previously disclosed in our June 30, 2010 Form 10-Q.*

The Company acknowledges 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.

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If you have any questions, please call the undersigned at 919-636-5013.

Sincerely

*/s/ Robert Andrade*

Robert Andrade

Chief Financial Officer

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