

Via Facsimile and U.S. Mail
Mail Stop 4720

December 10, 2009

Mr. Thomas R. Staab, II
Treasurer & Chief Financial Officer
Inspire Pharmaceuticals, Inc.
4222 Emperor Boulevard, Suite 200
Durham, NC 27703-8466

**Re: Inspire Pharmaceuticals, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2008
DEF 14A filed March 26, 2009
File No. 1-31577**

Dear Mr. Staab:

We have reviewed your filing and have the following comments. In our comments, we ask you to provide us with information to better understand your disclosure. Where a comment requests you to revise disclosure, the information you provide should show us what the revised disclosure will look like and identify the annual or interim filing, as applicable, in which you intend to first include it. If you do not believe that revised disclosure is necessary, explain the reason in your response. After reviewing the information provided, we may raise additional comments and/or request that you amend your filing.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the fiscal year ended December 31, 2008

Patents and Proprietary Rights, page 14

1. Please expand your disclosure here to include how many patents to which you own the rights, identify which patents are related to which product families, the range of expiration dates of those patents, the jurisdiction of those patents, and to include the same details about any of your patents that are in-licensed.

Properties, page 40

2. It appears that your lease agreement for your administrative and laboratory space in Durham, North Carolina is material; as such, please file this agreement as an exhibit.

Item 7. Management's Discussion and analysis of Financial Condition and Results of Operations,
Critical Accounting Policies and Estimates,
Revenue Recognition, page 47

3. We believe your disclosure related to your reserves for estimated rebates, discounts, chargebacks, product returns, and other sales incentives and your accrual for sales returns could be improved as follows:
 - a. Disclose the nature and amount of each accrual at the balance sheet date and the effect that could result from using other reasonably likely assumptions than what you used to arrive at each accrual such as a range of reasonably likely amounts or other type of sensitivity analysis.
 - b. In addition to levels of inventory in the distribution channel that you discuss, discuss other factors such as the estimated remaining shelf life, price changes from competitors and introductions of generics and/or new products that you considered in estimating each accrual.
 - c. To the extent that information you considered in b) is quantifiable, disclose both quantitative and qualitative information and discuss to what extent information is from external sources, e.g. end-customer prescription demand, third-party market research data comparing wholesaler inventory levels to end-customer demand. For example, in discussing your estimate of product that may be returned, consider disclosing and discussing, the total amount of product in sales dollars that could potentially be returned as of the balance sheet date and disaggregated by expiration period.
 - d. Disclose a roll forward of each accrual for each period presented showing the following:
 - Beginning balance,
 - Current provision related to sales made in current period,
 - Current provision related to sales made in prior periods,
 - Actual returns or credits in current period related to sales made in current period,
 - Actual returns or credits in current period related to sales made in prior periods, and
 - Ending balance.

- e. In your discussion of results of operations for the period to period revenue comparisons, discuss the amount of and reason for fluctuations for each type of reduction of gross revenue, i.e. product returns, chargebacks, customer rebates and other discounts and allowances, including the effect that changes in your estimates of these items had on your revenues and operations.

Schedule 14A

2008 Annual Cash Bonuses, page 30

4. Please provide draft disclosure for your next proxy statement that expands your disclosure regarding individual performance goals to include the goals set for each named executive officer and how the extent of achievement of those goals will determine whether each named executive officer receives the target or maximum bonus, or some percentage thereof. Finally, please confirm that in your next proxy statement you will discuss the actual extent of achievement of those goals that led to the bonuses ultimately awarded.

* * *

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your response to our comments and provide the requested information. Detailed letters greatly facilitate our review. Please furnish the letter to us via EDGAR under the form type label CORRESP.

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 all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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 connection with responding to our comments, please provide, in your letter, a 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.

Mr. Thomas R. Staab, II
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In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

Please contact Sasha Parikh, Staff Accountant, at (202) 551-3627 or Gus Rodriguez, Accounting Branch Chief, at (202) 551-3752 if you have questions regarding the processing of your response as well as any questions regarding comments on the financial statements and related matters. You may contact Michael Rosenthal, Staff Attorney, at (202) 551-3674 or Jeffrey Riedler, Assistant Director, at (202) 551-3715 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