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

DIVISION OF
CORPORATION FINANCE

September 7, 2010

William H. Lewis
President
Aegerion Pharmaceuticals, Inc.
CenterPointe IV
1140 Route 22 East, Suite 304
Bridgewater, New Jersey 08807

Re: Aegerion Pharmaceuticals, Inc.
Registration Statement on Form S-1
Filed August 10, 2010
File No. 333-168721

Dear Mr. Lewis:

We have reviewed your registration statement 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 by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

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

FORM S-1

General

1. Please note that when you file a pre-effective amendment containing pricing-related information, we may have additional comments. As you are likely aware, you must file this amendment prior to circulating the prospectus.

2. Please note that when you file a pre-effective amendment that includes your price range, it must be bone fide. We interpret this to mean that your range may not exceed $2 if you price below $20 and 10% if you price above $20.

3. Please provide us proofs of all graphic, visual or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.

4. Please note that where we provide examples to illustrate what we mean by our comments, they are examples and not exhaustive lists. If our comments are applicable to portions of the filing that we have not cited as examples, make the appropriate changes in accordance with our comments.

Prospectus Summary
Our Company, page 1

5. Please explain the term "orphan drug designation" the first time it is used and describe both the positive and negative consequences of having an orphan drug designation.

6. Please expand your disclosure in this section to disclose that you have never generated revenues from the sale of any products and the amount of your accumulated deficit as of June 30, 2010.

Lomitapide, page 1

7. Please expand your disclosure on the top of page 2 to disclose that participants in the early clinical trials conducted by BMS also experienced an accumulation of fat in the liver and elevated liver enzymes. Based on your disclosure on page 14, it appears that the adverse events occurred in your Phase III study after you applied dose titration. Please expand your disclosure to clarify that these adverse events have occurred even after dose titration.

Risks Associated with Our Business, page 3

8. Please expand your disclosure to identify each of the undesirable side effects associated with lomitapide and clarify that the effects have been experienced in your current Phase III study.

Risk Factors, page 9

9. You disclose that you have received and/or intend to seek orphan designation from the FDA and EMA for lomitapide for the treatment of HoFH and FC. Please consider including a risk factor disclosing that you may be prevented from commercializing your products if a competitor with orphan drug status received FDA approval before you receive FDA approval.

"Our limited operating history makes it difficult to evaluate our business and prospects." page 11

10. In addition to your limited operating history, this risk factor appears to imply that there are also risks relating to your lack of experience in obtaining marketing approval and commercializing a product candidate. Please expand your disclosure to include a separately headed risk factor that addresses all of the risks to your business related to your

lack of experience in obtaining marketing approval and commercializing a product candidate.

"In earlier preclinical studies and clinical trials, lomitapide was found to cause undesirable side effects…, " page 13

11. Please revise the discussion to identify the risk, including the identification of undesirable side effects, and potential consequences and move the detailed disclosure and mitigating information to the Business section.

"Failures or delays in the commencement or completion of preclinical or clinical testing could result in increased costs to us…," page 15

12. Please include separate standalone risk factor discussions disclosing:

    - The possibility that positive results in preclinical or early clinical trials might not be predicative of similar results in later stage clinical trials; and

    - Changes in regulatory requirements or unanticipated events may result in necessary changes to clinical trial protocols.

    Each of these risk factors should include a caption identifying the risk and potential consequences.

"Our market is subject to intense competition.…" page 24

13. You disclose that if either Isis or AMT is able to obtain marketing approval and commercialize its product candidate before you are able to do so for lomitapide, this could provide Isis or AMT a significant competitive advantage. To the extent you are aware, please disclose whether you believe Isis or AMT has applied for orphan drug designation for their product candidates and the treatment of HoFH or FC. If so, please revise your disclosure here and in your Business section to disclose the length of the marketing exclusivity that would be available to Isis or AMT and the impact of such exclusivity on your business.

"If we fail to comply with our obligations in our license agreements…" page 30

14. Please expand your disclosure to disclose the limits of the field of use for lomitapide under your license agreement with The Trustees of the University of Pennsylvania.

Use of Proceeds, page 38

15. Please indicate whether you expect to complete the Phase III clinical trial of lomitapide with the proceeds from this offering. Additionally, disclose the stage of development you expect to achieve with respect to lomitapide for treatment of patients with FC.

Capitalization, page 41

16. Please revise your disclosure to clarify whether the pro forma information will reflect the effects of the beneficial conversion feature once an estimated offering price has been established. If not, please explain to us why not and separately disclose the impact in the explanatory note.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Estimates
Valuation of Financial Instruments, page 53

17. Please revise your disclosure to clarify whether you adjusted the fair value for auction rate securities based on information received from third-party valuations and if so, the procedures you performed to validate the information you received.

Stock-Based Compensation, page 53

18. Please add a column to your table for stock option activity for the fair value of the common stock.

19. In the first paragraph following the table on page 54 you disclose that you determined the risk-free interest rate by reference to implied yields available from three-year and five-year U.S. Treasury securities with a remaining term equal to the expected life assumed at the date of grant. In Note 9 on page F-25 you disclose that you utilized the five-year and seven-year Treasury yields to determine the risk-free rates. Please revise your disclosure to correct this inconsistency. If you utilized the three- and five-year Treasury yields, please explain to us why this is reasonable given your disclosed 6.25 year expected option life.

20. Please revise your disclosure in the second paragraph on page 56 to clarify why the mere withdrawal of your IPO registration statement in the fourth quarter of 2008 contributes to the decline in the fair value of your common stock.

21. Please explain to us why the fair value of your common stock remained unchanged over the year from the first quarter of 2009 to the first quarter of 2010.

22. Please revise your disclosure to present the intrinsic value of outstanding vested and unvested options as of the most recent balance sheet date based on the estimated IPO price.

Results of Operations, page 57

23. Please revise your disclosure to include an explanation for the change in fair value of warrant liability and the change in other than temporary impairment on investments in securities for all periods presented.

Comparison of the Year ended December 31, 2009 and the Year Ended December 31, 2008
Change in Fair Value of Warrant Liability, page 59

24. Please explain why the disclosure states that the exercise price of the warrant was decreased to $1.86 when elsewhere in the document the exercise price is disclosed as $2.74.

Contractual Obligations and Commitments, page 61

25. Please revise the disclosure of your UPenn and Bayer license commitments to reconcile the total potential milestone obligations outstanding to the $15 million discussed in Note 5 of your annual financial statements on page F-17.

Business, page 64

26. Throughout the registration statement, you cite various estimates, statistics and other figures. For example:

    - Page 65: "We estimate that up to 20,000 adults in the United States have severe hypertriglyceridemia with TG levels above 2,000 mg/dL;"

    - Page 66: Information included in the subsection "Broader Patient Populations;"

    In the prospectus, please attribute these statements and other similar statements to the source from which you obtained the information. Where you cite your own estimates, please explain how you arrived at those estimates and disclose any third-party sources you relied upon.

Historical Development of Lomitapide, page 72

27. Please expand your disclosure in the first paragraph following the table on page 73 to disclose the reduced LDL-C levels when ezetimibe and atorvastatin was given as a monotherapy.

28. You disclose that liver enzyme elevations occurred in a small proportion of patients and led to discontinuations from study drug. Please quantify the increase in liver enzyme elevations and disclose the number or percentage of patients that discontinued the study due to these elevations in liver enzymes.

Familial Chylomicronemia (FC), page 73

29. Please revise your disclosure to describe the FDA's compassionate use program.

Intellectual Property, page 76

30. Please expand your disclosure to identify the expiration dates of your material non-U.S. issued patents.

Licenses, page 77

31. Please revise your discussion regarding your license agreements with the University of Pennsylvania and Bayer Healthcare AG to disclose a range of royalty payments (e.g. low-single digits or a range not to exceed ten percent).

Management
Board Leadership Structure and Board's Role in Risk Oversight, page 91

32. You disclose that upon the closing of this offering, you intend to separate the positions of chairman of the board and chief executive. It appears from your signature page that Mr. Lewis is acting as your chief executive officer and Mr. Scheer is your chairman of the board. Please clarify whether you believe these positions are currently separate.

Executive Compensation
Compensation Discussion and Analysis
Annual Cash Compensation
Cash Incentive Bonuses, page 96

33. Please revise your disclosure in this section to provide a discussion of your Compensation Committee's evaluation of the level of achievement of each corporate objective established for your cash incentive bonuses and how this level of achievement lead to the actual bonus awarded.

Equity Incentive Compensation, page 96

34. You disclose that your board of directors considered numerous factors in setting equity incentive awards for 2009, including the number of shares available for issuance under the 2006 Option Plan and the contributions that the executives made to corporate objectives in 2009. Please expand your disclosure to provide a discussion of the contributions of each executive that were considered by your compensation committee and/or board in their evaluation and how these contributions lead to the number of shares included in the equity incentive award.

Employment Agreements and Severance Agreements, page 105

35. Please file a copy of your offer letter and/or consulting agreement with Mr. Garrambone as an exhibit to your registration statement.

Director Compensation, page 107

36. You include your non-employee director compensation policy as an exhibit in your Exhibit Index. When available, please revise your disclosure to disclose the terms of your non-employee director compensation policy.

37. Please file copies of your board compensation agreements with Mr. Garrambone and Dr. Gotto. Please also file copies and disclose the material terms of your consulting agreements with Mr. Scheer and Dr. Gotto.

Notes to Financial Statements

1. Summary of Significant Accounting Policies
Fair Value of Financial Instruments, page F-10

38. Please revise your disclosure to include the summarized table of fair value measurements for all periods presented. Similarly, please include the Level 3 rollfoward for all periods presented. This comment also applies to Note 1 of the unaudited financial statements.

39. Please disclose the amounts for the assumptions used to determine the value of the warrant and clarify the specific option pricing model that was used.

Warrant, page F-12

40. It does not appear that the terms of the warrants covered by this policy note are disclosed in the notes to your audited financial statements. Please revise your disclosure to discuss the material terms of these warrants or tell us where you have made these disclosures in your audited financial statements.

3. Investments in Securities, page F-16

41. Please include the summary of investments held for all periods presented. This comment also applies to Note 4 in the unaudited financial statements.

9. Stock Option Plans, page F-24

42. Please disclose and provide us with additional information regarding your determination of the estimated volatility for your stock. Please provide further detail as to how you identified the reasonably similar publicly traded companies as discussed in ASC 718-10-55-25. Specify how you considered the stage of life cycle, size and financial leverage of the guideline peer group that you looked to in estimating your volatility factor.

43. Please explain to us why the risk-free interest rate decreased significantly from 2008 to 2009. In your response please explain why the rate you use for 2009 of 0.37% is substantially lower than the rates for five- and seven-year U.S. Treasury constant maturities as disclosed on the Federal Reserve website. In this regard, the daily rates for

five-year Treasuries in 2009 range from 1.36% to 2.95%, while for seven-year Treasuries the rates range from 1.71% to 3.60%.

44. Please revise your disclosure to discuss the impact of your October 2008 option repricing to $2.08 and your March 2009 option repricing to $0.97 as disclosed on page 55. At a minimum, please provide the information required by ASC 718-10-50-2h2.

45. We may have additional comments on your accounting for stock compensation and related disclosure once you have disclosed an estimated offering price. Please provide quantitative and qualitative disclosures explaining the difference between the estimated offering price and the fair value of your recent stock sales.

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 Act of 1933 and all applicable Securities 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;

- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and

- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Vanessa Robertson at (202) 551-3649 or Mark Brunhofer at (202) 551-3638 if you have questions regarding comments on the financial statements and related matters. Please contact Jennifer Riegel at (202) 551-3575, Suzanne Hayes at (202) 551-3675 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Jocelyn M. Arel, Esq.
Michael H. Bison, Esq.
Goodwin Procter LLP
53 State Street
Boston, Massachusetts 02109