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

DIVISION OF
CORPORATION FINANCE

October 4, 2013

Via- Email
Ms. Karen Corraini
General Counsel and Corporate Secretary
Xenon Pharmaceuticals Inc.
200 – 3650 Gilmore Way
Burnaby, British Columbia V5G 4W8, Canada

Re: Xenon Pharmaceuticals, Inc.
Amendment # 1 to Draft Registration Statement on Form S-1
Submitted September 25, 2013
CIK No. 0001582313

Dear Ms. Corraini:

We have reviewed your amended draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

"Recent patent reform legislation and court decisions could increase . . .," page 39

1. We note your response to our prior comment 10. Please expand your disclosure to identify the sections of the Leahy-Smith Act that increases uncertainty with respect to your owned and licensed patents in the U.S., and explain the reasons for the increased uncertainty caused by these sections of the Leahy-Smith Act.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Significant Judgments and Estimates
Valuation of Common Shares, page 71

2. Please refer to your response to our comment 17 and address the following:
   - Please disclose the weighting of the income and market approach for the June 30, 2013 valuation and tell us how you determined that the weighting for this valuation

and the January 1, 2013 valuation was appropriate given the company's stage of development. Also tell us if there were significant differences between the two approaches.

- Please note we may have additional comments on your accounting for stock compensation and related disclosure once you have disclosed an estimated offering price.

Business
Approved Product, page 84

3. We note on page 85 that uniQure is planning to apply for regulatory approval for Glybera. Additionally, we note that uniQure plans to file an IND with the FDA in the first half of 2014. Please note that the filing for an IND should not be characterized as applying for regulatory approval, which language suggests that the company is making an NDA filing. If uniQure is making an NDA filing, please revise your disclosure accordingly. If uniQure is filing an IND, please state the phase of testing that uniQure expects to start with given that Glybera is already approved in the EU. Please make corresponding changes throughout the prospectus where you include similar disclosure.

Topical XEN402 Phase 2 Trial in EM, page 92

4. We note your response to our prior comment 25 and the inclusion of the p-values in the table on page 93. Please also state in this section that the cooling frequency and cooling duration results did not meet the test of statistical significance.

Strategic Alliances, page 101

5. We note your disclosure of the Agreements with each of uniQure, Teva, Isis, Genentech, and Merck. For each of these agreements, please explain how the royalty term is calculated. Additionally, please state the year each of these royalty terms would expire given the patents that are currently outstanding.

Notes to Financial Statements
11. Stock Option Plan, page F-18

6. Please refer to your response to our comment 50. Several of the companies that you are using in your calculation of historical volatility have product revenues, and do not appear to be similar in size or market capitalization to the Company. Please revise your calculation of historical volatility to exclude these companies or confirm that there would not be a material difference in the volatility and stock based compensation expense for each of the periods presented if these companies were excluded.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide

in the Division's October 11, 2012 announcement on the SEC website at http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Tabatha Akins at (202) 551-3658 or Joel Parker at (202) 551-3651 if you have questions regarding comments on the financial statements and related matters. Please contact Matthew Jones at (202) 551-3786, or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
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