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

DIVISION OF
CORPORATION FINANCE

May 15, 2018

Hugh O'Dowd
Chief Executive Officer
Neon Therapeutics, Inc.
40 Erie St., Suite 110
Cambridge, MA 02139

Re: Neon Therapeutics, Inc.
Amendment No. 3 to Draft Registration Statement on Form S-1
Submitted May 3, 2018
CIK No. 0001694187

Dear Mr. O'Dowd:

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.

Amendment No. 3 to Draft Registration Statement on Form S-1 submitted May 3, 2018

Use of Proceeds, page 72

1. It appears from your disclosure that the proceeds from the offering will not be sufficient to fund development of your product candidates through regulatory approval and commercialization. Please revise to make this clear and disclose the sources of other funds needed to reach regulatory approval and commercialization for each product candidate. Refer to Instruction 3 to Item 504 of Regulation S-K.

Business
Our Approaches and Product Candidates , page 94

2. We note your disclosure on page 95 that you plan to initiate NT-003 and NT-004 in the second half of 2018. Please also disclose whether you have submitted Investigational New Drug ("IND") applications or its foreign equivalent to conduct these studies.

3. Please revise the pipeline table to replace the "clinical development" column in the graph with columns representing the clinical trials that will need to be completed prior to regulatory approval for each product candidate. Please also adjust the length of the arrows to reflect more precisely the current stage of development for each product candidate. As one example, we note that the product development pipeline chart suggests that progress in your development of NT-002 is the same as that of NT-003 and NT-004, whereas your narrative disclosure suggests that you have initiated a Phase 1b clinical trial for NT-002 and you have not initiated clinical studies for NT-003 and NT-004. In addition, please remove the T Cell Therapies arrow under NEON/SELECT, as the table should highlight your products in development that are reasonably likely to result in an approved product in the foreseeable future. Research and discovery activities that precede the identification of a product candidate are too remote to be highlighted in the pipeline table.

NT-002: Phase 1b Clinical Trial of NEO-PV-01 in Metastatic Non-Small Cell Lung Cancer, page 121

4. Please expand your disclosure regarding the ongoing Phase 1b clinical trial of NEO-PV-01 in combination with pembrolizumab to provide specific details regarding the testing, such as the location(s) of the clinical trials, the scope and design of the study, primary and secondary endpoints, and the expected duration.

You may contact Jacob Luxenburg at 202-551-2339 or Jim Rosenberg at 202-551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Irene Paik at 202-551-6553 or Mary Beth Breslin at 202-551-3625 with any other questions.

Division of Corporation Finance
Office of Healthcare & Insurance

cc: Laurie Burlingame, Esq. - Goodwin Procter LLP