

April 11, 2016

VIA EDGAR AND FEDERAL EXPRESS

United States Securities and Exchange Commission
Division of Corporation Finance
Mail Stop 4561
100 F. Street, N.E.
Washington, D.C. 20549
Attention: Suzanne Hayes

**Re: Intellia Therapeutics, Inc.
Amendment No. 3 to Draft Registration Statement on Form S-1
Submitted March 17, 2016
CIK No. 0001652130**

Dear Ms. Hayes:

This letter is submitted on behalf of Intellia Therapeutics, Inc. (the “**Company**”) in response to the comments of the staff of the Division of Corporation Finance (the “**Staff**”) of the U.S. Securities and Exchange Commission (the “**Commission**”) with respect to the Company’s Amendment No. 3 to Draft Registration Statement on Form S-1, confidentially submitted on March 17, 2016 (the “**Draft Registration Statement**”), as set forth in the Staff’s letter dated March 25, 2016 addressed to Nessian Bermingham, Ph.D., President and Chief Executive Officer of the Company (the “**Comment Letter**”). The Company is concurrently filing its Registration Statement on Form S-1 (the “**Registration Statement**”), which includes changes to reflect responses to the Staff’s comments.

For reference purposes, the text of the Comment Letter has been reproduced herein with responses below each numbered comment. For your convenience, we have italicized the reproduced Staff comments from the Comment Letter. Unless otherwise indicated, page references in the descriptions of the Staff’s comments refer to the Draft Registration Statement, and page references in the responses refer to the Registration Statement. All capitalized terms used and not otherwise defined herein shall have the meanings set forth in the Registration Statement.

The responses provided herein are based upon information provided to Goodwin Procter LLP by the Company. In addition to submitting this letter via EDGAR, we are sending via Federal Express five (5) copies of each of this letter and the Registration Statement (marked to show changes from the Draft Registration Statement).

Overview, page 1

1. We note your response to our prior comment 3 and your revised disclosures relating to recent developments in the patent interference proceeding. Please revise the last bullet point on page 2 to indicate that the intellectual property is subject to an interference proceeding. You may also indicate that UC/Vienna/Charpentier is presumed to be the first inventor and therefore the Broad Institute bears the burden to prove otherwise.

RESPONSE: In response to the Staff's comments, the Company has updated the last bullet point on page 2 to indicate that its licensed UC/Vienna/Charpentier United States patent applications are subject to an interference proceeding.

Business

Our Team, page 76

2. We note your response to our prior comment 5. However, your revised disclosure does not disclose Drs. Barrangou's and Doudna's affiliations with Caribou. Please revise your disclosure to describe each individual's affiliation to Caribou.

RESPONSE: In response to the Staff's comments, the Company has updated its disclosure regarding its scientific founders and advisors on page 78 to include reference to Drs. Barrangou's and Doudna's affiliations with Caribou.

Senior Executive Cash Incentive Bonus Plan, page 120

3. Please file a copy of this agreement as an exhibit to your Form S-1, in accordance with Item 601(b)(10)(iii)(A) of Regulation S-K.

RESPONSE: In response to the Staff's comments, the Company has updated its Exhibit Index to include the Senior Executive Cash Incentive Bonus Plan and has filed this agreement as an exhibit to the Registration Statement.

If you should have any questions concerning the enclosed matters, please contact the undersigned at (617) 570-1971.

Sincerely,

/s/ Arthur R. McGivern
Arthur R. McGivern

cc: Nesson Bermingham, Ph.D., *Intellia Therapeutics, Inc.*
José E. Rivera, Esq., *Intellia Therapeutics, Inc.*
William D. Collins, Esq., *Goodwin Procter LLP*
Joseph H. Apke, *Deloitte & Touche LLP*