April 27, 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.
Registration Statement on Form S-1
Submitted April 11, 2016
File No. 333-210689

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 Registration Statement on Form S-1, filed on April 11, 2016 (the "**Registration Statement**"), as set forth in the Staff's letter dated April 21, 2016 addressed to Nessan Bermingham, Ph.D., President and Chief Executive Officer of the Company (the "**Comment Letter**"). The Company is concurrently filing its Amendment No. 3 to the Registration Statement (the "**Amended 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 Registration Statement, and page references in the responses refer to the Amended Registration Statement. All capitalized terms used and not otherwise defined herein shall have the meanings set forth in the Amended Registration Statement.

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

Business, page 75

Our Platform, page 81

1. *Please provide a brief explanation of the term "high-throughput" at first use to enable a lay investor to understand such term.*

RESPONSE: In response to the Staff's comments, the Company has updated its disclosure on page 82 to include an explanation that "high-throughput" indicates high volume processing.

2. *Please enlarge the graphics on page 82 to improve legibility.*

RESPONSE: In response to the Staff's comments, the Company has included larger graphics with improved resolution on page 83.

Collaborations

Regeneron Pharmaceuticals, Inc., page 94

3. *We note your statements that you are eligible to earn royalties on a per-product basis during the term of the Regeneron agreement and that the "agreement will continue until the date when no royalty or other payment obligations are due." Please revise your description of this agreement to clarify the royalty term.*

RESPONSE: In response to the Staff's comments, the Company has added disclosure on page 96 to clarify the royalty term under the Regeneron agreement.

4. *We note your statement that you are eligible to earn "low-double-digit royalties" under this agreement. Please revise your description of royalty rates to provide a range that does not exceed ten percent (e.g. between twenty and thirty percent).*

RESPONSE: In response to the Staff's comments, the Company has updated its disclosure on page 96 to revise the description of royalty rates under the Regeneron agreement as ranging from the high single digits to low-teens.

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: Nessan 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*