

November 15, 2018

Christopher A. Kroeger, M.D., M.B.A.  
President and Chief Executive Officer  
OvaScience, Inc.  
9 Fourth Avenue  
Waltham, MA 02451

Re: OvaScience, Inc.  
Registration Statement on Form S-3  
Filed November 6, 2018  
File No. 333-228209

Dear Dr. Kroeger:

We have limited our review of your registration statement to those issues we have addressed in our comment.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comment applies 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 this comment, we may have additional comments.

Form S-3 Filed November 6, 2018

General

1. It appears that Section 5 of the Stock Purchase Agreement provides that the purchaser has the option to waive Millendo's and OvaScience's obligations. Additionally, the Explanatory Note in the registration statement indicating that you expect this registration statement to become effective promptly after the closing of the post-closing financing appears to imply a waiver of the Section 5.5 condition that the resale registration statement shall have been declared effective by the SEC. Therefore, it does not appear that you have a valid exemption under Section 4(2) of the Securities Act of 1933. You may withdraw the registration statement and refile it once the shares are outstanding or amend the investment agreement to remove the investors' ability to waive any of the

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closing conditions and refile your registration statement. For guidance, refer to Securities Act Sections Compliance & Disclosure Interpretation 139.11.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Refer to Rules 460 and 461 regarding requests for acceleration. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Jeffrey Gabor at 202-551-2544 or Suzanne Hayes at 202-551-3675 with any questions.

Sincerely,  
FirstName LastName Christopher A. Kroeger, M.D., M.B.A.  
Division of Corporation

Finance  
Comapany NameOvaScience, Inc.

Office of Healthcare &

Insurance  
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cc: Megan Gates, Esq.  
FirstName LastName