

Mail Stop 6010

September 29, 2008

Mr. Peter Lawrence
Chief Executive Officer
ArQule, Inc.
19 Presidential Way
Woburn, Massachusetts 01801

**Re: ArQule, Inc.
Form 10-K
Filed March 17, 2008
File No. 000-21429**

Dear Mr. Lawrence:

We have reviewed your filing and have the following comments. Where the comments request you to revise disclosure, the information you provide should show us what the revised disclosure will look like and identify the annual or quarterly filing, as applicable, in which you intend to first include it. If you do not believe that revised disclosure is necessary, explain the reason in your response. After reviewing the information provided, we may raise additional comments and/or request that you amend your filing.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comment or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Kyowa Hakko Kogyo Co., Ltd. Alliance, page 7

1. We note that in this section you state that, "Upon commercialization, ArQule will receive double-digit royalties from Kyowa." We further note that you were granted confidential treatment of the royalty terms of your agreement with Kyowa. However, the term, "double-digit royalties" is too broad. Please revise this statement to disclose a more narrow range, such as, "in the low teens", or, "in the high twenties". Further, please disclose the aggregate of all sales milestones, and the duration and termination provisions of the agreement with Kyowa.

Hoffman-La Roche Alliance, page 8

2. We note that you were granted confidential treatment of some terms of your company's development agreement with Roche. Please add disclosure here of the material terms of the agreement with Roche, including: whether the agreement is exclusive; the aggregate of the development and sales milestone payments; the option fee amount; the number of candidates that may be licensed; the cost of exercising the option to develop drug candidates; royalty rates, or a range of royalty rates; and the duration and termination provisions of the agreement.

Patents and Proprietary Rights, page 10

3. Please disclose expiration details about your material patents. Alternatively, you may disclose a range of expiration dates for groups of related patents by the same jurisdiction.

Intellectual Property Agreements

4. We note that you filed agreements relating to licensing your intellectual property to other parties for further development and marketing. However, we note that you did not file any agreements related to the intellectual property you acquired that serves as the basis of the work you are currently conducting. For example, you disclose on page 11 that you acquired patents relating to ARQ-501 from the Dana-Farber Cancer Institute. Please disclose all agreements in place related to your acquisition of intellectual property, file each of these agreements, and disclose the material terms of these agreements in your 10-K. If you do not believe that these agreements are material please provide your reasoning for that determination.

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Please respond to these comments within 10 business days or tell us when you will provide us with responses. Please furnish a letter that keys your response to our comments and provide the requested information. Detailed letters greatly facilitate our review. Please furnish your letter on EDGAR under the form type label CORRESP.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in your letter, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comment on your filing.

Please contact Michael Rosenthal at (202) 551-3674 or me at (202) 551-3715 with any questions.

Sincerely,

Jeffrey P. Riedler
Assistant Director