



DIVISION OF
CORPORATION FINANCE

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

June 4, 2014

Via Facsimile

Tyler W. Painter
Chief Financial Officer
Solazyme, Inc.
225 Gateway Boulevard
South San Francisco, California 94080

Re: Solazyme, Inc.
Form 10-K for Fiscal Year Ended December 31, 2013
Filed March 14, 2014
File No. 1-35189

Dear Mr. Painter:

We have reviewed your filing 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 within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. 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 any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Legal Proceedings, page 46

1. Please tell us why you have not included in your legal proceedings disclosure regarding the arbitration between you and Roquette Frères, S.A. discussed on page 26. Please refer to Item 103 of Regulation S-K.

Exhibits, page 121

2. We note your disclosure on page 55 that Mitsui, QVC, Sephora and the Solazyme Bunge JV each accounted for more than 10% of your revenues, and collectively accounted for 72% of your total revenues. Please tell us what consideration you have given to filing your agreements with QVC, Sephora and Mitsui as exhibits to your registration statement.

Tyler W. Painter
Solazyme, Inc.
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You may contact Tracie Towner, Staff Accountant, at (202) 551-3744 if you have questions regarding comments on the financial statements and related matters. You may contact Asia Timmons-Pierce, Staff Attorney, at (202) 551-3754, Pamela Long, Assistant Director, at (202) 551-3765, or me at (202) 551-3355 with any other questions.

Sincerely,

/s/ Terence O'Brien

Terence O'Brien
Branch Chief