

February 27, 2020

Roni Mamluk
Chief Executive Officer
Ayala Pharmaceuticals, Inc.
Oppenheimer 4
Rehovot 7670104, Israel

Re: Ayala Pharmaceuticals, Inc.
Amendment No. 1 to Draft Registration Statement on Form S-1
Submitted February 12, 2020
CIK No. 0001797336

Dear Dr. Mamluk:

We have reviewed your amended draft registration statement 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 by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Amendment No. 1 to Draft Registration Statement on Form S-1

Prospectus Summary, page 1

1. With reference to prior comment 5, please revise the Summary to explain briefly why certain response rates are "unconfirmed" and why some "will remain unconfirmed."
Risk Factors, page 11

2. We continue to evaluate your response to prior comment 7 and your disclosure in the risk factor at the bottom of page 19. Please tell us more specifically what data interpretations are third-party interpretations that you are dependent upon. Also tell us whether you have assessed and interpreted the same data or results.

Roni Mamluk
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3. We note your response to prior comment 2 and your pipeline table on page 3. Please revise your disclosure on page 117 to discuss the on-going Phase 1 trial for AL 102.
You may contact Li Xiao at 202-551-4391 or Jeanne Baker at 202-551-3691 if you have questions regarding comments on the financial statements and related matters. Please contact William Mastrianna at 202-551-3778 or Joseph McCann at 202-551-6262 with any other questions.

Sincerely,

Division of

Corporation Finance

