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## LATHAM & WATKINS<sup>LLP</sup>

March 6, 2020

**VIA EDGAR AND OVERNIGHT DELIVERY**

Mr. William Mastrianna  
Office of Healthcare and Insurance  
United States Securities and Exchange Commission  
100 F Street, N.E.  
Mail Stop 4720  
Washington, D.C. 20549

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

Dear Mr. Mastrianna:

On behalf of Ayala Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), we are transmitting this letter in response to comments received from the staff (the “**Staff**”) of the Securities and Exchange Commission by letter dated February 27, 2020 with respect to the Company’s Amendment No. 1 to Confidential Draft Registration Statement on Form S-1 (the “**Draft Registration Statement**”). This letter is being submitted together with the filed Registration Statement (the “**Registration Statement**”), which has been revised to address various of the Staff’s comments. The bold and numbered paragraphs below correspond to the numbered paragraphs in the Staff’s letter and are followed by the Company’s responses. For the Staff’s convenience, we are also sending, by courier, copies of this letter and marked copies of the Registration Statement that reflect changes made to the Draft Registration Statement. Unless otherwise indicated, capitalized terms used herein have the meanings assigned to them in the Draft Registration Statement.

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**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.”**

Response: The Company respectfully acknowledges the Staff’s comment and in response has revised the disclosure on pages 2, 96 and 104 of the Registration Statement.

**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 on. Also tell us whether you have assessed and interpreted the same data or results.**

Response: The Company respectfully acknowledges the Staff’s comment and in response has revised the disclosure on page 20 of the Registration Statement.

**Business, page 93**

3. **We note your response to prior comment 2 and your pipeline table page 3. Please revise your disclosure on page 117 to discuss the on-going Phase 1 trial for AL102.**

Response: The Company respectfully acknowledges the Staff’s comment and in response has revised the disclosure on page 119 of the Registration Statement.

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We hope that the foregoing has been responsive to the Staff's comments and look forward to resolving any outstanding issues as quickly as possible. Please do not hesitate to contact me at 212-906-1761 or Peter Handrinos at 617-948-6060 with any questions or further comments you may have regarding this filing or if you wish to discuss the above.

Sincerely,

/s/ Keith L. Halverstam

Keith L. Halverstam  
of LATHAM & WATKINS LLP

Enclosures

cc: (via e-mail)

Roni Mamluk, Chief Executive Officer, Ayala Pharmaceuticals, Inc.  
Peter N. Handrinos, Latham & Watkins LLP