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

FORM 8-A

**FOR REGISTRATION OF CERTAIN CLASSES OF SECURITIES
PURSUANT TO SECTION 12(b) OR (g) OF
THE SECURITIES EXCHANGE ACT OF 1934**

Ayala Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State of incorporation
or organization)

82-3578375
(I.R.S. Employer
Identification No.)

**Oppenheimer 4
Rehovot, Israel**
(Address of principal executive offices)

7670104
(Zip Code)

Securities to be registered pursuant to Section 12(b) of the Act:

**Title of each class
to be so registered**
Common Stock, \$0.01 par value per share

**Name of each exchange on which
each class is to be registered**
The Nasdaq Stock Market LLC

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A.(c) or (e), check the following box.

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A.(d) or (e), check the following box.

If this form relates to the registration of a class of securities concurrently with a Regulation A offering, check the following box.

Securities Act registration statement or Regulation A offering statement file number to which this form relates: **333-236942**

Securities to be registered pursuant to Section 12(g) of the Act: **None.**

Item 1. Description of Registrant's Securities to be Registered.

The description of the Common Stock, par value \$0.01 per share, of Ayala Pharmaceuticals, Inc. (the "Registrant") under the heading "Description of Capital Stock" in the prospectus included in the Registrant's Registration Statement on Form S-1 (File No. 333-236942), as initially filed with the Securities and Exchange Commission on March 6, 2020, including exhibits, and as may be subsequently amended (the "Registration Statement"), is hereby incorporated by reference. Any form of prospectus that constitutes part of the Registration Statement and is subsequently filed by the Registrant pursuant to Rule 424(b) under the Securities Act of 1933, as amended, shall be deemed to be incorporated by reference herein.

Item 2. Exhibits.

Pursuant to the Instructions as to Exhibits for Form 8-A, no exhibits are required to be filed because no other securities of the Registrant are registered on The Nasdaq Stock Market LLC and the securities registered hereby are not being registered pursuant to Section 12(g) of the Securities Exchange Act of 1934, as amended.

SIGNATURE

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the Registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: May 4, 2020

AYALA PHARMACEUTICALS, INC.

By: /s/ Roni Mamluk
Roni Mamluk, Ph.D.
Chief Executive Officer