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

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): September 12, 2022

Ayala Pharmaceuticals, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	001-39279	82-3578375
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

Oppenheimer 4
Rehovot, Israel 7670104
(Address of Principal Executive Offices) (Zip Code)

Registrant's Telephone Number, Including Area Code: (857) 444-0553

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value per share	**AYLA**	**The Nasdaq Global Market**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 8.01. Other Events.

On September 12, 2022, Ayala Pharmaceuticals, Inc. (the "Company") announced updated interim results from Part A of its ongoing RINGSIDE Pivotal Phase 2/3 clinical trial evaluating AL102 in desmoid tumors. In February 2022, Part A completed enrollment of 42 patients with progressive desmoid tumors in three study arms across three doses of AL102: 1.2 mg daily, 2 mg twice weekly, and 4 mg twice weekly with follow up to evaluate safety, tolerability and tumor volume by MRI after 16 weeks. The activity of AL102 is being evaluated by change in tumor volume (using central MRI readings) and response (per RECIST 1.1) determined by blinded independent central review. The Company plans to advance Part B of the RINGSIDE study with a selected dose of 1.2 mg daily and to enroll patients in the open-label extension study at the same dose.

Results as of the Cut-Off Date of July 14, 2022

Part A Interim Efficacy Results:

- At data cut, 28 patients were evaluable for tumor volume and 29 were evaluable for RECIST with a scan at base line and at least one additional scan at week 16.
- 12 subjects had follow up MRI scans at week 28 and one patient had a scan at week 40.
- One patient had a partial response ("PR") per RECIST at week 16, confirmed at week 28.
- Three additional unconfirmed PRs were observed, two at week 28 and one at week 40.
- Continuous tumor volume reduction was observed over time in all patients that underwent 2 or more MRI scans.

Part A Interim Efficacy Results of Selected Dose of 1.2 mg daily:

- At week 16 there were 9 evaluable patients for RECIST in the selected dose of 1.2 mg once daily with one PR observed, confirmed at week 28. The remaining 8 patients had stable disease, of which 7 patients had a tumor reduction.
- At week 28 there were three patients evaluable for RECIST in the selected dose of 1.2 mg daily with one confirmed and one unconfirmed PR and one stable disease with all patients showing tumor reduction and deepening of tumor shrinkage since previous scan.
- At the selected dose of 1.2 mg once daily, at week 16 there were 9 evaluable patients for volume change with 7 patients experiencing tumor volume reduction. At week 28 there were three evaluable patients for volume change in the selected dose of 1.2 mg once daily with all three patients experiencing continuous tumor shrinkage.

Part A Safety:

- AL102 was generally well tolerated at all doses.
- Most adverse events were grade 1 or 2 and included mainly diarrhea.
- No grade 4 or 5 events were observed and low rates of grade 3 events.
- At the selected dose (1.2 mg once daily) 3 out of the 14 patients (21.4%) had grade 3 events.
- Ovarian dysfunction was observed in about 22% of women with childbearing potential (N=23).

Forward-Looking Statements

This Current Report on Form 8-K (the "Current Report") contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this Current Report that do not relate to matters of historical fact should be considered forward-looking statements, including statements relating to our development of AL102, the timing and results of our clinical trials or readouts, and the design of our clinical trials. These forward-looking statements are based on management's current expectations. The words "may," "will," "should," "expect," "plan," "anticipate," "could," "intend," "target," "project," "estimate," "believe," "predict," "potential" or "continue" or the negative of these terms or other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the following: we have incurred significant losses since inception and anticipate that we will continue to incur losses

for the foreseeable future; we are not currently profitable, and we may never achieve or sustain profitability; we will require additional capital to fund our operations, and if we fail to obtain necessary financing, we may not be able to complete the development and commercialization of AL101 and AL102; we have a limited operating history and no history of commercializing pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability; we are heavily dependent on the success of AL101 and AL102, our most advanced product candidates, which are still under clinical development, and if either AL101 or AL102 does not receive regulatory approval or is not successfully commercialized, our business may be harmed; due to our limited resources and access to capital, we must prioritize development of certain programs and product candidates; these decisions may prove to be wrong and may adversely affect our business; the outbreak of COVID-19, may adversely affect our business, including our clinical trials; our ability to use our net operating loss carry forwards to offset future taxable income may be subject to certain limitations; our product candidates are designed for patients with genetically defined cancers, which is a rapidly evolving area of science, and the approach we are taking to discover and develop product candidates is novel and may never lead to marketable products; we were not involved in the early development of our lead product candidates, therefore, we are dependent on third parties having accurately generated, collected and interpreted data from certain preclinical studies and clinical trials for our product candidates; enrollment and retention of patients in clinical trials is an expensive and time-consuming process and could be made more difficult or rendered impossible by multiple factors outside our control; if we do not achieve our projected development and commercialization goals in the timeframes we announce and expect, the commercialization of our product candidates may be delayed and our business will be harmed; our product candidates may cause serious adverse events or undesirable side effects, which may delay or prevent marketing approval, or, if approved, require them to be taken off the market, require them to include safety warnings or otherwise limit their sales; the market opportunities for AL101 and AL102, if approved, may be smaller than we anticipate; we may not be successful in developing, or collaborating with others to develop, diagnostic tests to identify patients with Notch-activating mutations; we have never obtained marketing approval for a product candidate and we may be unable to obtain, or may be delayed in obtaining, marketing approval for any of our product candidates; even if we obtain FDA approval for our product candidates in the United States, we may never obtain approval for or commercialize them in any other jurisdiction, which would limit our ability to realize their full market potential; we have been granted Orphan Drug Designation for AL101 for the treatment of ACC and may seek Orphan Drug Designation for other indications or product candidates, and we may be unable to maintain the benefits associated with Orphan Drug Designation, including the potential for market exclusivity, and may not receive Orphan Drug Designation for other indications or for our other product candidates; although we have received Fast Track designation for AL101, and may seek Fast Track designation for our other product candidates, such designations may not actually lead to a faster development timeline, regulatory review or approval process; we face significant competition from other biotechnology and pharmaceutical companies and our operating results will suffer if we fail to compete effectively; we are dependent on a small number of suppliers for some of the materials used to manufacture our product candidates, and on one company for the manufacture of the active pharmaceutical ingredient for each of our product candidates; if we are unable to enter into new collaborations, or if these collaborations are not successful, our business could be adversely affected; enacted and future healthcare legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates, if approved, and may affect the prices we may set; if we are unable to obtain, maintain, protect and enforce patent and other intellectual property protection for our technology and products or if the scope of the patent or other intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and we may not be able to compete effectively in our markets; we may engage in acquisitions or in-licensing transactions that could disrupt our business, cause dilution to our stockholders or reduce our financial resources; and risks related to our operations in Israel could materially adversely impact our business, financial condition and results of operations. These and other important factors discussed under the caption “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021 filed with the U.S. Securities and Exchange Commission (SEC) on March 28, 2022 and our other filings with the SEC, could cause actual results to differ materially from those indicated by the forward-looking statements made in this Current Report. Any such forward-looking statements represent management’s estimates as of the date of this Current Report. New risk factors and uncertainties may emerge from time to time, and it is not possible to predict all risk factors and uncertainties. While we may elect to update such forward-looking statements at some point in the future, except as required by law, we disclaim any obligation to do so, even if subsequent events cause our views to change. Although we believe the expectations reflected in such forward-looking statements are reasonable, we can give no assurance that such expectations will prove to be correct. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this Current Report.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Ayala Pharmaceuticals, Inc.

Date: September 12, 2022

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