
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549**

**POST-EFFECTIVE AMENDMENT NO. 1 TO:
FORM S-8 REGISTRATION STATEMENT NO. 333-255773
UNDER
THE SECURITIES ACT OF 1933**

KALEIDO BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

47-3048279
(I.R.S. Employer
Identification No.)

**65 Hayden Avenue
Lexington, MA 02421**
(Address of principal executive offices, zip code)

**Kaleido Biosciences, Inc. 2019 Stock Option and Incentive Plan
Kaleido Biosciences, Inc. 2019 Employee Stock Purchase Plan**
(Full title of the plans)

**Kaleido Biosciences, Inc.
65 Hayden Avenue
Lexington, MA 02421**
(Name and address of agent for service)

(617) 674-9000
(Telephone number, including area code, of agent for service)

with a copy to:
**Kingsley L. Taft
Laurie A. Burlingame
Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210
(617) 570-1000**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
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 7(a)(2)(B) of the Securities Act.

DEREGISTRATION OF SHARES

This Post-Effective Amendment (this “Amendment”) relates to the following Registration Statement on Form S-8 (the “Registration Statement”) filed by Kaleido Biosciences Inc., a Delaware corporation (the “Company”) with the Securities and Exchange Commission (the “SEC”):

- Registration Statement [No. 333-255773](#), filed on May 5, 2021, relating to the Kaleido Biosciences, Inc. 2019 Stock Option and Incentive Plan and the Kaleido Biosciences, Inc. 2019 Employee Stock Purchase Plan.

The purpose of this Amendment is to deregister all remaining securities available for issuance under the Registration Statement. In accordance with the undertakings made by the Company in the Registration Statement to remove from registration by means of a post-effective amendment any securities that had been registered for issuance but remain unsold at the termination of the offering, the Company hereby removes and withdraws from registration any and all securities registered pursuant to the Registration Statement that remain unsold as of the date hereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Amendment to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Boston, Massachusetts, on April 25, 2022. No other person is required to sign this Amendment in reliance upon Rule 478 under the Securities Act of 1933.

KALEIDO BIOSCIENCES, INC.

By: /s/ Theo Melas-Kyriazi
Name: Theo Melas-Kyriazi
Title: Director