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

**FORM S-8
REGISTRATION STATEMENT**

*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 Number)

65 Hayden Avenue
Lexington, MA 02421
(617) 674-9000
(Address of Principal Executive Offices)

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

Daniel L. Menichella
Chief Executive Officer and President
65 Hayden Avenue
Lexington, MA 02421
(617) 674-9000

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Kingsley L. Taft
Laurie A. Burlingame
Goodwin Procter LLP
100 Northern Avenue
Boston, Massachusetts 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

Accelerated filer

Non-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.

CALCULATION OF REGISTRATION FEE

| Title of Securities to be Registered | Amount to be Registered⁽¹⁾ | Proposed Maximum Offering Price per Share⁽²⁾ | Proposed Maximum Aggregate Offering Price⁽²⁾ | Amount of Registration Fee⁽⁵⁾ |
|--|--|--|--|---|
| 2019 Stock Option and Incentive Plan Common Stock, \$0.001 par value per share | 1,440,912 shares ⁽³⁾ | \$7.91 | \$11,368,795.70 | \$ 1,243.48 |
| 2019 Employee Stock Purchase Plan Common Stock, \$0.001 par value per share | 360,228 shares ⁽⁴⁾ | \$7.91 | \$2,842,198.92 | \$310.87 |
| Total | 1,801,140 shares | | \$14,210,994.60 | \$1,554.35 |

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, or the Securities Act, this Registration Statement shall also cover any additional shares of common stock which become issuable under the above-named plans by reason of any stock dividend, stock split, recapitalization or any other similar transaction effected without the receipt of consideration which results in an increase in the number of our outstanding shares of common stock. Pursuant to Rule 416(c) under the Securities Act, this Registration Statement shall also cover an indeterminate amount of interests to be offered or sold pursuant to the employee benefit plans described herein.
- (2) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) of the Securities Act of 1933, as amended. The price per share and aggregate offering price are calculated on the basis of \$7.91, the average of the high and low price of the registrant's Common Stock as reported on the NASDAQ Global Select Market on April 30, 2021 (which date is within 5 business days of the filing date hereof).
- (3) Represents an automatic increase to the number of shares available for issuance under the 2019 Stock Option and Incentive Plan, in accordance with the automatic annual increase provision of the 2019 Stock Option and Incentive Plan. Shares available for issuance under the 2019 Stock Option and Incentive Plan were previously registered on Form S-8 filed with the Securities and Exchange Commission on March 8, 2019 (Registration No. 333-230167) and May 8, 2020 (Registration No. 333-238123).
- (4) Represents an automatic increase to the number of shares available for issuance under the 2019 Employee Stock Purchase Plan, in accordance with the automatic annual increase provision of the 2019 Employee Stock Purchase Plan. Shares available for issuance under the 2019 Employee Stock Purchase Plan were previously registered on Form S-8 filed with the Securities and Exchange Commission on March 8, 2019 (Registration No. 333-230167) and May 8, 2020 (Registration No. 333-238123).
- (5) Calculated by multiplying the proposed maximum aggregate offering price of securities to be registered by 0.0001091.

Proposed sales to take place as soon after the effective date of the Registration Statement as awards are granted, exercised or distributed under the above-named plans.

STATEMENT OF INCORPORATION BY REFERENCE

This Registration Statement on Form S-8 is filed to register the offer and sale of (i) an additional 1,440,912 shares of the Registrant's common stock, \$0.001 par value per share, to be issued under the Registrant's 2019 Stock Option and Incentive Plan and (ii) an additional 360,228 shares of the Registrant's common stock, \$0.001 par value per share, to be issued under the Registrant's 2019 Employee Stock Purchase Plan. Pursuant to General Instruction E, this Registration Statement incorporates by reference the contents of (1) the registration statement on Form S-8, File No. 333-230167, filed by the Registrant on March 8, 2019, relating to the Registrant's 2015 Stock Incentive Plan, 2019 Stock Option and Incentive Plan and 2019 Employee Stock Purchase Plan, and (2) the registration statement on Form S-8, File No. 333- 238123, filed by the Registrant on May 8, 2020, relating to the Registrant's 2019 Stock Option and Incentive Plan and 2019 Employee Stock Purchase Plan.

Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 8. Exhibits.

See the Exhibit Index below for a list of exhibits filed as part of this registration statement on Form S-8, which Exhibit Index is incorporated herein by reference.

EXHIBIT INDEX

| Exhibit No. | Description |
|--------------------|---|
| 4.1 | Form of Amended and Restated Certificate of Incorporation of the Registrant (Incorporated by reference to Exhibit 3.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-229204)). |
| 4.2 | Form of Amended and Restated Bylaws (Incorporated by reference to Exhibit 3.4 to the registrant's Registration Statement on Form S-1, as amended (File No. 333-229204)). |
| 4.3 | Second Amended and Restated Investors' Rights Agreement by and among the Registrant and certain of its stockholders, dated February 21, 2018 (Incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-229204)). |
| 5.1* | Opinion of Goodwin Procter LLP. |
| 23.1* | Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm. |
| 23.2* | Consent of Goodwin Procter LLP (included in Exhibit 5.1). |
| 24.1* | Power of Attorney (included on signature page). |
| 99.1 | 2019 Stock Option and Incentive Plan, and forms of award agreements thereunder (Incorporated by reference to Exhibit 10.3 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-229204)). |
| 99.2 | 2019 Employee Stock Purchase Plan (Incorporated by reference to Exhibit 10.5 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-229204)). |

* Filed herewith.

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 Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Boston, Commonwealth of Massachusetts, on the 5th day of May, 2021.

KALEIDO BIOSCIENCES, INC.

By: /s/ Daniel L. Menichella
Daniel L. Menichella
Chief Executive Officer, President and Director

POWER OF ATTORNEY AND SIGNATURES

KNOW ALL BY THESE PRESENT, that each individual whose signature appears below hereby constitutes and appoints each of Daniel L. Menichella and William Duke, Jr. as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following person in the capacities and on the date indicated.

| <u>Name</u> | <u>Title</u> | <u>Date</u> |
|---|--|--------------------|
| <u>/s/ Daniel L. Menichella</u> Daniel L. Menichella | Chief Executive Officer, President and Director (Principal Executive Officer) | May 5, 2021 |
| <u>/s/ William Duke, Jr.</u> William Duke | Chief Financial Officer (Principal Financial and Accounting Officer) | May 5, 2021 |
| <u>/s/ Michael Bonney</u> Michael Bonney | Chair of the Board | May 5, 2021 |
| <u>/s/ Theo Melas-Kyriazi</u> Theo Melas-Kyriazi | Director | May 5, 2021 |
| <u>/s/ Bonnie Bassler</u> Bonnie Bassler, Ph.D. | Director | May 5, 2021 |
| <u>/s/ Grady Burnett</u> Grady Burnett | Director | May 5, 2021 |
| <u>/s/ Jean Mixer</u> Jean Mixer | Director | May 5, 2021 |
| <u>/s/ Anthony G. Quinn, M.D., Ph.D.</u> Anthony G. Quinn, M.D., Ph.D. | Director | May 5, 2021 |
| <u>/s/ Geoffrey von Maltzahn, Ph.D.</u> Geoffrey von Maltzahn, Ph.D. | Director | May 5, 2021 |
| <u>/s/ Anne Prener, M.D., Ph.D.</u> Anne Prener, M.D., Ph.D. | Director | May 5, 2021 |



Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210
goodwinlaw.com
+1 617 570 1000

May 5, 2021

Kaleido Biosciences, Inc.
65 Hayden Avenue
Lexington, MA 02421

Re: Securities Being Registered under Registration Statement on Form S-8

Ladies and Gentlemen:

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-8 (the "Registration Statement") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), on or about the date hereof relating to an aggregate of 1,801,140 shares (the "Shares") of Common Stock, \$0.001 par value per share ("Common Stock"), of Kaleido Biosciences, Inc., a Delaware corporation (the "Company"), that may be issued pursuant to the Company's 2019 Stock Option and Incentive Plan and 2019 Employee Stock Purchase Plan (collectively, the "Plans").

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinion set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law.

For purposes of the opinion set forth below, we have assumed that no event occurs that causes the number of authorized shares of Common Stock available for issuance by the Company to be less than the number of then unissued Shares.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, upon issuance and delivery against payment therefor in accordance with the terms of the Plans, will be validly issued, fully paid and nonassessable.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ GOODWIN PROCTER LLP

GOODWIN PROCTER LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 3, 2021 relating to the financial statements of Kaleido Biosciences, Inc., appearing in the Annual Report on Form 10-K of Kaleido Biosciences, Inc. for the year ended December 31, 2020.

/s/ Deloitte & Touche LLP

Boston, Massachusetts

May 5, 2021