

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

POST-EFFECTIVE AMENDMENT NO. 1 TO FORM S-8 REGISTRATION STATEMENT NO. 333-264814  
POST-EFFECTIVE AMENDMENT NO. 1 TO FORM S-8 REGISTRATION STATEMENT NO. 333-255942

FORM S-8

REGISTRATION STATEMENT  
*Under*  
*The Securities Act of 1933*

**AXCELLA HEALTH INC.**  
(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction of  
incorporation or organization)

26-3321056  
(I.R.S. Employer  
Identification Number)

P.O. Box 1270  
Littleton, Massachusetts 01460  
(857) 320-2200  
(Address of Principal Executive Offices)

Axcella Health Inc. 2010 Stock Incentive Plan  
Axcella Health Inc. 2019 Stock Option and Incentive Plan  
Axcella Health Inc. 2019 Employee Stock Purchase Plan  
(Full Title of the Plans)

Craig R. Jalbert  
President and Chief Executive Officer  
Axcella Health Inc.

P.O. Box 1270  
Littleton, Massachusetts 01460  
(857) 320-2200

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

*Copies to:*

Kingsley L. Taft  
Yasin E. Akbari  
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	<input type="checkbox"/> Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/> Smaller reporting company	<input checked="" type="checkbox"/>
	Emerging growth company	<input checked="" type="checkbox"/>

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 SECURITIES

This Post-Effective Amendment No. 1 (“Post-Effective Amendment No. 1”), filed by Axcella Health Inc., a Delaware corporation (the “Company”), removes from registration all shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”) registered under the following Registration Statements on Form S-8 filed by the Company (each a “Registration Statement,” and collectively, the “Registration Statements”) with the U.S. Securities and Exchange Commission (the “Commission”), pertaining to the registration of shares of Common Stock offered under certain employee benefit and equity plans and agreements:

- Registration Statement on Form S-8 (No. 333-238964), filed with the Commission on June 5, 2020, pertaining to the registration of 1,159,441 shares of Common Stock of the Company, relating to the Company’s 2019 Stock Option and Incentive Plan (the “2019 Plan”) and Axcella Health Inc. 2019 Employee Stock Purchase Plan (the “2019 ESPP”).
- Registration Statement on Form S-8 (No. 333-231570), filed with the Commission on May 17, 2019, pertaining to the registration of 5,691,561 shares of Common Stock of the Company, relating to the Company’s 2019 Plan, 2019 ESPP and the Company’s 2010 Stock Incentive Plan.

As previously disclosed in a Form 8-K filed with the Commission on November 1, 2023, the board of directors of the Company (the “Board”) (i) determined that it is in the best interests of the Company and its stakeholders to effect a transfer and assignment of substantially all of the Company’s assets to an assignee (the “Assignee”) for the benefit of creditors (the “Assignment”); (ii) determined that it is in the best interests of the Company and its stakeholders that, following the Assignment, the Company be dissolved in accordance with Delaware General Corporation Law pursuant to a Plan of Dissolution (the “Dissolution”); (iii) approved seeking stockholder approval to proceed with the Assignment and the Dissolution pursuant to Delaware law (the “Assignment and Dissolution Proposals”) at a special meeting of stockholders (the “Special Meeting of Stockholders”) to be held as soon as reasonably practicable following November 1, 2023. As a result of the proposed Assignment and Dissolution, the Company has terminated all offerings of its securities pursuant to its existing registration statements, including the Registration Statements. The Company hereby terminates the effectiveness of the Registration Statements and removes and withdraws from registration all securities of the Company registered under the Registration Statements that remain unsold as of the date hereof.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing this Post-Effective Amendment No. 1 to the Registration Statements on Form S-8 and has duly caused this Post-Effective Amendment No. 1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Littleton in the Commonwealth of Massachusetts, on November 17, 2023.

AXCELLA HEALTH INC.

By: /s/ Craig R. Jalbert

Title: Chief Executive Officer, President and Director

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