

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

**FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

BlossomHill Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)

85-1578711
(I.R.S. Employer
Identification No.)

**10255 Science Center Drive
Suite 200
San Diego, California 92121
(858) 732-3880**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

J. Jean Cui, Ph.D.
President and Chief Executive Officer
**10255 Science Center Drive
Suite 200
San Diego, California 92121
(858) 732-3880**

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

Copies to:

**Kenneth J. Rollins
Charles S. Kim
Edmond J. Lay
Dylan Kornbluth
Cooley LLP
10265 Science Center Drive
San Diego, California 92121
(858) 550-6000**

Vincent Liptak, J.D., Ph.D., MBA
**Executive Vice President and General
Counsel**
BlossomHill Therapeutics, Inc.
**10255 Science Center Drive
Suite 200
San Diego, California 92121
(858) 732-3880**

Matthew T. Bush
Latham & Watkins LLP
**12670 High Bluff Drive
San Diego, California 92130
(858) 523-5400**

Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box: ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☒ (333-297512)

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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. ☐

The Registration Statement shall become effective upon filing in accordance with Rule 462(b) promulgated under the Securities Act of 1933, as amended.

EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This Registration Statement is being filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the “**Securities Act**”), by BlossomHill Therapeutics, Inc. (the “**Registrant**”), for the sole purpose of increasing the aggregate number of shares of common stock offered and registered by the Earlier Registration Statement (as defined below) by 1,796,875 shares, 234,375 of which are subject to purchase upon exercise of the underwriters’ option to purchase additional shares of the Registrant’s common stock. The contents of the Registration Statement on Form S-1, as amended (File No. [333-297512](#)), including all exhibits thereto (the “**Earlier Registration Statement**”), filed by the Registrant with the Securities and Exchange Commission (the “**Commission**”) pursuant to the Securities Act, which was declared effective by the Commission on August 6, 2026, are incorporated by reference into this Registration Statement. The additional shares of common stock that are being registered for issuance and sale pursuant to this Registration Statement are in an amount and at a price that together represent no more than 20% of the maximum aggregate offering price set forth in Exhibit 107 of the Earlier Registration Statement.

The required opinion and consents are listed on an Exhibit Index attached hereto and filed herewith.

EXHIBIT INDEX

Exhibit No.	Description
5.1	Opinion of Cooley LLP
23.1	Consent of Independent Registered Public Accounting Firm
23.2	Consent of Cooley LLP (included in Exhibit 5.1)
24.1*	Power of Attorney
107	Filing Fee Table

* Previously filed on the signature page to the Registrant’s Registration Statement on Form S-1 (File No. 333-297512), originally filed with the Commission on July 17, 2026 and incorporated by reference herein.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, California on August 6, 2026.

BLOSSOMHILL THERAPEUTICS, INC.

By: /s/ J. Jean Cui, Ph.D.

J. Jean Cui, Ph.D.

President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-1 has been signed by the following persons in the capacities held on the dates indicated.

Signature	Title	Date
<u>/s/ J. Jean Cui, Ph.D.</u> J. Jean Cui, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	August 6, 2026
<u>/s/ Jason Keyes, MBA</u> Jason Keyes, MBA	Chief Financial Officer (Principal Financial and Accounting Officer)	August 6, 2026
<u>*</u> Y. Peter Li, Ph.D.	Executive Chairman	August 6, 2026
<u>*</u> Sundeep Agrawal, M.D.	Director	August 6, 2026
<u>*</u> Bihua Chen, MBA	Director	August 6, 2026
<u>*</u> Carl L. Gordon, Ph.D., CFA	Director	August 6, 2026
<u>*</u> Sheila Gujrathi, M.D.	Director	August 6, 2026
<u>*</u> John Schmid, MBA	Director	August 6, 2026

*By: /s/ Jason Keyes, MBA

Jason Keyes, MBA

Attorney-in-Fact



Kenneth J. Rollins
+1 (858) 550 6136
krollins@cooley.com

August 6, 2026

BlossomHill Therapeutics, Inc.
10255 Science Center Drive, Suite 200
San Diego, CA 92121

Ladies and Gentlemen:

We have acted as counsel to BlossomHill Therapeutics, Inc., a Delaware corporation (the “*Company*”), in connection with the filing by the Company of a registration statement on Form S-1 (the “*Registration Statement*”) with the Securities and Exchange Commission (the “*Commission*”) pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the “*Securities Act*”), covering an underwritten public offering by the Company of up to 1,796,875 shares of its common stock, par value \$0.0001 per share (the “*Shares*”). The Registration Statement incorporates by reference the registration statement on Form S-1, as amended (No. 333-297512) (the “*Prior Registration Statement*”), including the prospectus that is part of the Prior Registration Statement (the “*Prospectus*”).

In connection with this opinion, we have (i) examined and relied upon (a) the Registration Statement and the Prospectus, (b) the Company’s certificate of incorporation and bylaws, each as currently in effect, (c) the Company’s Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, filed as Exhibits 3.2 and 3.4 to the Prior Registration Statement, respectively, each of which is to be in effect in connection with the closing of the offering contemplated by the Prior Registration Statement and (d) such other records, documents, opinions, certificates, memoranda and instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below and (ii) the Amended and Restated Certificate of Incorporation referred to in clause (i)(c) is filed with the Secretary of State of the State of Delaware before issuance of the Shares.

We have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies, the accuracy, completeness and authenticity of certificates of public officials and the due authorization, execution and delivery of all documents by all persons other than the Company. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation.

On the basis of the foregoing, in reliance thereon and subject to the assumptions, qualifications, limitations and exceptions set forth herein, we are of the opinion that the Shares, when sold and issued against payment therefor as described in the Prior Registration Statement and the Prospectus, will be validly issued, fully paid and nonassessable.

Cooley LLP 10265 Science Center Drive, San Diego, CA 92121-1117
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BlossomHill Therapeutics, Inc.
Page 2

This opinion is limited to the matters expressly set forth in this letter, and no opinion has been or should be implied, or may be inferred, beyond the matters expressly stated. This opinion speaks only as to law and facts in effect or existing as of the date hereof, and we have no obligation or responsibility to update or supplement this letter to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

We consent to the reference to our firm under the heading “Legal Matters” in the Prospectus and to the filing of this opinion as an exhibit to the Registration Statement. In giving such consents, we do not thereby 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 of the Commission thereunder.

Sincerely,

Cooley LLP

By: /s/ Kenneth J. Rollins
Kenneth J. Rollins

Cooley LLP 10265 Science Center Dr., San Diego, CA 92121
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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated April 24, 2026 (August 3, 2026 as to the effects of the reverse stock split described in Note 10), relating to the financial statements of BlossomHill Therapeutics, Inc., appearing in Registration Statement No. 333-297512 on Form S-1 filed by BlossomHill Therapeutics, Inc.

/s/ Deloitte & Touche LLP

San Diego, California

August 6, 2026

Calculation of Filing Fee Tables

S-1

BlossomHill Therapeutics, Inc.

Table 1: Newly Registered and Carry Forward Securities ☐Not Applicable

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid in Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
Fees to be Paid	1 Equity	Common Stock, \$0.0001 par value per share	457(a)	1,796,875	\$ 16.00	28,750,000.00	\$ 0.0001381	\$ 3,970.38				
Fees Previously Paid												
Carry Forward Securities												
Carry Forward Securities												
Total Offering Amounts:						\$ 28,750,000.00		\$ 3,970.38				
Total Fees Previously Paid:								\$ 0.00				
Total Fee Offsets:								\$ 0.00				
Net Fee Due:								\$ 3,970.38				

Offering Note

¹ The registrant previously registered securities with a proposed maximum aggregate offering price not to exceed \$152,734,375 on a Registration Statement on Form S-1 (File No. 333-297512), which was declared effective by the Securities and Exchange Commission on August 6, 2026. In accordance with Rule 462(b) promulgated under the Securities Act of 1933, as amended, an additional amount of securities having a proposed maximum aggregate offering price of \$28,750,000 is hereby registered, which includes the shares of common stock that the underwriters have the option to purchase.

Table 2: Fee Offset Claims and Sources ☒Not Applicable

		Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
Rules 457(b) and 0-11(a)(2)												
Fee Offset Claims												
Fee Offset Sources												
Rule 457(p)												
Fee Offset Claims												
Fee Offset Sources												

Table 3: Combined Prospectuses ☒Not Applicable

	Security Type	Security Class Title	Amount of Securities Previously Registered	Maximum Aggregate Offering Price of Securities Previously Registered	Form Type	File Number	Initial Effective Date
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