

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

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

**G1 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)

**26-3648180**  
(I.R.S. Employer  
Identification Number)

**79 T.W. Alexander Drive  
4501 Research Commons, Suite 100  
Research Triangle Park, NC 27709  
(919) 213-9835**

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

**Mark A. Velleca, M.D., Ph.D.  
President and Chief Executive Officer  
G1 Therapeutics, Inc.  
79 T.W. Alexander Drive  
4501 Research Commons, Suite 100  
Research Triangle Park, NC 27709  
(919) 213-9835**

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

**Copies to:**

**Jonathan L. Kravetz, Esq.  
Megan N. Gates, Esq.  
Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.  
One Financial Center  
Boston, MA 02111  
(617) 542-6000**

**Michael D. Maline, Esq.  
Edwin M. O'Connor, Esq.  
Goodwin Procter LLP  
The New York Times Building  
620 Eighth Avenue  
New York, NY 10018  
(212) 813-8800**

Approximate date of commencement of proposed sale to the public:  
**As soon as practicable after the effective date of this registration statement.**

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.  Registration No. 333-217285

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, 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  (Do not check if a smaller reporting company)

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**

<b>Title of Each Class of Securities to be Registered</b>	<b>Amount to be Registered(1)</b>	<b>Proposed Maximum Offering Price Per Share</b>	<b>Proposed Maximum Aggregate Offering Price</b>	<b>Amount of Registration Fee(2)</b>
Common stock, \$0.0001 par value per share	862,500	\$15.00	\$12,937,500.00	\$1,499.46

- (1) Represents only the additional number of shares of common stock being registered hereby, which includes up to 112,500 shares that may be purchased by the underwriters upon the exercise of their option to purchase additional shares. Does not include 7,187,500 shares of common stock that the Registrant previously registered on the registration statement on Form S-1 (File No. 333-217285).
- (2) The registration fee is calculated in accordance with Rule 457(a) under the Securities Act of 1933, as amended (the "Securities Act"). The registrant previously registered securities at an aggregate offering price not to exceed \$122,187,500 on a Registration Statement on Form S-1 (File No. 333-217285), which was declared effective by the Securities and Exchange Commission on May 16, 2017. In accordance with Rule 462(b) under the Securities Act, an additional amount of securities having a proposed maximum aggregate offering price of \$12,937,500 is hereby registered.

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**This Registration Statement shall become effective upon filing with the Securities and Exchange Commission in accordance with Rule 462(b) promulgated under the Securities Act.**

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**EXPLANATORY NOTE AND INCORPORATION BY REFERENCE**

This registration statement on Form S-1 relates to the public offering of common stock of G1 Therapeutics, Inc. contemplated by the registration statement on Form S-1 (File No. 333-217285), as amended, filed by G1 Therapeutics, Inc. with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), which was declared effective by the Commission on May 16, 2017 (the "Prior Registration Statement"). This registration statement is filed pursuant to Rule 462(b) promulgated under the Securities Act, solely to increase the number of shares of common stock to be offered in the public offering by 862,500 shares, which includes up to 112,500 shares that may be purchased by the underwriters upon the exercise of their option to purchase additional shares. The contents of the Prior Registration Statement, including all exhibits thereto, are hereby incorporated by reference herein.

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

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**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in Research Triangle Park, North Carolina, on the 16th day of May, 2017.

**G1 THERAPEUTICS, INC.**

/s/ Mark A. Velleca, M.D., Ph.D.

Mark A. Velleca, M.D., Ph.D.

President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
/s/ Mark A. Velleca, M.D., Ph.D. _____ Mark A. Velleca, M.D., Ph.D.	Chief Executive Officer, President and Director <i>(principal executive officer)</i>	May 16, 2017
/s/ Gregory J. Mossinghoff _____ Gregory J. Mossinghoff	Chief Business Officer <i>(principal financial officer)</i>	May 16, 2017
/s/ Jennifer K. Moses _____ Jennifer K. Moses	Vice President of Finance and Administration <i>(principal accounting officer)</i>	May 16, 2017
* _____ Seth A. Rudnick, M.D.	Chairman of the Board	May 16, 2017
* _____ Fredric N. Eshelman, Pharm.D.	Director	May 16, 2017
* _____ Peter Kolchinsky, Ph.D.	Director	May 16, 2017
* _____ Glenn P. Muir	Director	May 16, 2017
* _____ Tyrell J. Rivers, Ph.D.	Director	May 16, 2017
* _____ Christy L. Shaffer, Ph.D.	Director	May 16, 2017
* _____ Timothy E. Sullivan	Director	May 16, 2017
*By: /s/ Gregory J. Mossinghoff _____ Gregory J. Mossinghoff, Attorney-in-fact		May 16, 2017

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**EXHIBIT INDEX**

<b>Exhibit Number</b>	<b>Description of Exhibit</b>
5.1	Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.
23.1	Consent of PricewaterhouseCoopers LLP.
23.2	Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in Exhibit 5.1).
24.1*	Power of Attorney.

\* Included on the signature page to the Registrant's registration statement on Form S-1 (File No. 333-217285), filed with the Securities and Exchange Commission on April 13, 2017, and incorporated by reference herein.

# MINTZ LEVIN

One Financial Center  
Boston, MA 02111  
617-542-6000  
617-542-2241 fax  
www.mintz.com

May 16, 2017

G1 Therapeutics, Inc.  
79 T.W. Alexander Drive  
4501 Research Commons, Suite 100  
Research Triangle Park, NC 27709

Ladies and Gentlemen:

We have acted as legal counsel to G1 Therapeutics, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission (the "Commission") of (i) a Registration Statement (No. 333-217285) on Form S-1 (the "Initial Registration Statement"), and (ii) a second Registration Statement on Form S-1 filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the "Securities Act") (the "462(b) Registration Statement"), pursuant to which the Company is registering the offering for sale under the Securities Act of up to an aggregate of 862,500 additional shares (the "Shares") of the Company's common stock, par value \$0.0001 per share (the "Common Stock").

The Shares are to be sold by the Company pursuant to an underwriting agreement (the "Underwriting Agreement") to be entered into by and among the Company and J.P. Morgan Securities LLC and Cowen and Company, LLC, as representatives of the several underwriters to be named therein. The form of the Underwriting Agreement has been filed as Exhibit 1.1 to the Initial Registration Statement. This opinion is being rendered in connection with the filing of the 462(b) Registration Statement with the Commission. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the 462(b) Registration Statement.

In connection with this opinion, we have examined the Company's Fifth Amended and Restated Certificate of Incorporation, as amended, and Bylaws, each as currently in effect, and the form of the Underwriting Agreement; such other records of the corporate proceedings of the Company and certificates of the Company's officers as we have deemed relevant; the Initial Registration Statement and the exhibits thereto; and the 462(b) Registration Statement and the exhibits thereto.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified or photostatic copies and the authenticity of the originals of such copies.

Our opinion is limited to the General Corporation Law of the State of Delaware and we express no opinion with respect to the laws of any other jurisdiction. No opinion is expressed

**Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.**

BOSTON | LONDON | LOS ANGELES | NEW YORK | SAN DIEGO | SAN FRANCISCO | STAMFORD | WASHINGTON

G1 Therapeutics, Inc.

May 16, 2017

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herein with respect to the qualification of the Shares under the securities or blue sky laws of any state or any foreign jurisdiction.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

Based upon the foregoing, we are of the opinion that the Shares, when issued and sold in accordance with the form of the Underwriting Agreement most recently filed as an exhibit to the Initial Registration Statement and the prospectus that forms a part of the Initial Registration Statement, will be validly issued, fully paid and non-assessable.

We understand that you wish to file this opinion with the Commission as an exhibit to the 462(b) Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated under the Securities Act and to reference the firm's name under the caption "Legal Matters" in the prospectus which is incorporated by reference in the 462(b) Registration Statement, and we hereby consent thereto. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris,  
Glovsky and Popeo, P.C.

Mintz, Levin, Cohn, Ferris,  
Glovsky and Popeo, P.C.

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated February 9, 2017, except for the effects of the reverse stock split described in Note 12, as to which the date is May 11, 2017, relating to the financial statements of G1 Therapeutics, Inc., which appears in Amendment No. 3 to the Registration Statement on Form S-1 (No. 333-217285). We also consent to the reference to us under the heading "Experts" in Amendment No. 3 to the Registration Statement on Form S-1 (No. 333-217285).

/s/ PricewaterhouseCoopers LLP  
Raleigh, North Carolina  
May 16, 2017