

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

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

T2 Biosystems, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

8071
(Primary Standard Industrial
Classification Code Number)

20-4827488
(I.R.S. Employer
Identification Number)

**101 Hartwell Avenue
Lexington, Massachusetts 02421
(781) 457-1200**

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

**John P. McDonough
President and Chief Executive Officer
T2 Biosystems, Inc.
101 Hartwell Avenue
Lexington, Massachusetts 02421
(781) 457-1200**

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

Copies to:

**Johan V. Brigham
Peter N. Handrinos**
Latham & Watkins LLP
John Hancock Tower
200 Clarendon Street
Boston, MA 02116
(617) 948-6060

**Brent B. Siler
Divakar Gupta
Brian F. Leaf**
Cooley LLP
1114 Avenue of the Americas
New York, New York 10036
(212) 479-6000

**Approximate date of commencement of proposed sale to the public:
As soon as practicable after this Registration Statement is declared 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. Registration No. 333-197193

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 or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting 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

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Aggregate Offering Price Per Share(2)	Proposed Maximum Aggregate Offering Price (2)(3)	Amount of Registration Fee (4)(5)
Common Stock, \$0.001 par value per share	1,380,000	\$ 11.00	\$ 15,180,000	\$ 1,955.18

(1) Includes 180,000 shares that the underwriters have the option to purchase.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(a) under the Securities Act of 1933, as amended.

(3) In accordance with Rule 462(b) promulgated under the Securities Act, an additional amount of securities having a proposed maximum offering price of no more than 20% of the maximum aggregate offering price of the securities eligible to be sold under the related Registration Statement on Form S-1, as amended (File No. 333-197193), is hereby registered.

(4) Calculated pursuant to Rule 457(a) based on an estimate of the proposed maximum aggregate offering price. The Registrant previously registered an aggregate of \$78,200,000 of Common Stock on a Registration Statement on Form S-1 (File No. 333-197193), as amended, which was declared effective on August 6, 2014, and for which a filing fee of \$10,073.00 was previously paid.

(5) The Registrant certifies to the Securities and Exchange Commission that it has instructed its bank to pay the Commission the filing fee set forth above for the additional securities being registered hereby by wire transfer as soon as practicable (but in any event no later than the close of business on August 7, 2014), that it will not revoke such instructions, and that it has sufficient funds in such account to cover the amount of such filing fee.

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.

EXPLANATORY NOTE AND INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

This registration statement is being filed with the Securities and Exchange Commission (the "Commission") pursuant to Rule 462(b) under the Securities Act of 1933, as amended. This Registration Statement relates to the public offering of common stock, par value \$0.001 per share, of the Registrant contemplated by the Registration Statement on Form S-1, as amended (File No. 333-197193), initially filed with the Commission by the Registrant on July 2,

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

2

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Lexington, Commonwealth of Massachusetts, on this 6th day of August, 2014.

T2 BIOSYSTEMS, INC.

By: /S/ John P. McDonough
John P. McDonough
President and Chief Executive Officer

3

SIGNATURES

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.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ JOHN P. MCDONOUGH</u> John McDonough	President, Chief Executive Officer and Director (principal executive officer)	August 6, 2014
<u>/s/ MARC R. JONES</u> Marc R. Jones	Chief Financial Officer (principal financial and accounting officer)	August 6, 2014
<u>*</u> Joshua Bilenker, M.D.	Director	August 6, 2014
<u>*</u> Thomas J. Carella	Director	August 6, 2014
<u>*</u> Michael J. Cima, Ph.D.	Director	August 6, 2014
<u>*</u> Alan Crane	Director	August 6, 2014
<u>*</u> John W. Cumming	Director	August 6, 2014
<u>*</u> David Elsbree	Director	August 6, 2014
<u>*</u> Stanley N. Lapidus	Director	August 6, 2014
<u>*</u> Harry W. Wilcox	Director	August 6, 2014

*By: /S/ John P. McDonough
John P. McDonough
Attorney-in-fact

4

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description of Exhibit</u>
1.1(1)	Form of Underwriting Agreement
5.1	Opinion of Latham & Watkins LLP

23.1	Consent of Ernst & Young LLP
23.2(2)	Consent of Latham & Watkins LLP
24.1(3)	Power of Attorney

- (1) Previously filed as Exhibit 1.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-197193), initially filed with the Securities and Exchange Commission on July 2, 2014 and incorporated by reference herein.
- (2) Included in Exhibit 5.1.
- (3) Previously filed on the signature page to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-197193), initially filed with the Securities and Exchange Commission on July 2, 2014 and incorporated by reference herein.

John Hancock Tower, 20th Floor
 200 Clarendon Street
 Boston, Massachusetts 02116
 Tel: +1.617.948.6000 Fax: +1.617.948.6001
 www.lw.com

LATHAM & WATKINS LLP

FIRM / AFFILIATE OFFICES

Abu Dhabi	Milan
Barcelona	Moscow
Beijing	Munich
Boston	New Jersey
Brussels	New York
Chicago	Orange County
Doha	Paris
Dubai	Riyadh
Düsseldorf	Rome
Frankfurt	San Diego
Hamburg	San Francisco
Hong Kong	Shanghai
Houston	Silicon Valley
London	Singapore
Los Angeles	Tokyo
Madrid	Washington, D.C.

August 6, 2014

T2 Biosystems, Inc.
 101 Hartwell Lane
 Lexington, Massachusetts 02421

Re: Registration Statement No. 333-197193 and Registration Statement filed pursuant to Rule 462(b) promulgated under the Securities Act of 1933, as amended;
 5,980,000 shares of Common Stock, \$0.001 par value per share

Ladies and Gentlemen:

We have acted as special counsel to T2 Biosystems, Inc., a Delaware corporation (the “**Company**”), in connection with the registration of shares of the Company’s common stock, \$0.001 par value per share (the “**Common Stock**”), pursuant to a registration statement on Form S-1/A under the Securities Act of 1933, as amended (the “**Act**”), filed with the Securities and Exchange Commission (the “**Commission**”) on July 28, 2014 (Registration No. 333-197193) (as amended, the “**Initial Registration Statement**”) and a registration statement relating to the Initial Registration Statement filed pursuant to Rule 462(b) promulgated under the Act (the “**Post-Effective Amendment**” and together with the Initial Registration Statement, the “**Registration Statement**”). The Post-Effective Amendment relates to the registration of 1,380,000 additional shares of Common Stock (the “**Additional Shares**”). This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related prospectus (the “**Prospectus**”), other than as expressly stated herein with respect to the issue of the Additional Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to General Corporation Law of the State of Delaware (the “**DGCL**”) and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, the Additional Shares have been duly authorized by all necessary corporate action of the Company and are validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Prospectus under the heading “Legal Matters.” In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Latham & Watkins LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement on Form S-1 filed pursuant to Rule 462(b) of the Securities Act of 1933 of the reference to our firm under the caption "Experts" and our report dated April 24, 2014, (except for Note 17(a) and (b), as to which the date is July 15, 2014 and Note 17(c), as to which the date is July 25, 2014), relating to the financial statements of T2 Biosystems, Inc. included in Amendment No. 2 to the Registration Statement (Form S-1 No. 333-197193) and related Prospectus of T2 Biosystems, Inc. for the registration of its common stock.

/s/ Ernst & Young LLP
Boston, Massachusetts
August 6, 2014
