

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

**AMENDMENT NO. 2
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

CRISPR THERAPEUTICS AG

(Exact name of Registrant as specified in its Charter)

Switzerland
(State or other jurisdiction of
incorporation or organization)

2836
(Primary Standard Industrial
Classification Code Number)

Not Applicable
(I.R.S. Employer
Identification Number)

CRISPR Therapeutics AG
Aeschenvorstadt 36
4051 Basel
Switzerland
+41 61 228 7800

(Address, including Zip Code, and Telephone Number, including Area Code, of Registrant's Principal Executive Offices)

C T Corporation System
111 Eighth Avenue
New York, NY 10011
(212) 894-8800

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

Copies to:

Mitchell S. Bloom
Robert E. Puopolo
Seo Salimi
Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210
(617) 570-1000

Patrick O'Brien
Paul Kinsella
Ropes & Gray LLP
Prudential Tower
800 Boylston Street
Boston, MA 02199
(617) 951-7000

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, 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(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

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

EXPLANATORY NOTE:

This Amendment No. 2 to the Registration Statement on Form S-1 of CRISPR Therapeutics AG (File No. 333-213577) is an exhibits-only submission to file certain exhibits incorporated by reference in Item 16 of Part II of the Registration Statement and to restate the exhibit index incorporated by reference in Item 16. Accordingly, this Amendment No. 2 consists only of the facing page, this explanatory note, Part II of the Registration Statement, including the signature page, the exhibit index, and the exhibits filed herewith. The prospectus is unchanged and has therefore been omitted from this filing.

PART II
INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the sale of common shares being registered. All amounts are estimates except for the Securities and Exchange Commission, or SEC, registration fee, the Financial Industry Regulatory Authority, or FINRA, filing fee and the NASDAQ Global Market, or NASDAQ, listing fee:

<u>Expenses</u>	<u>Amount</u>
U.S. Securities and Exchange Commission registration fee	\$ 10,650
NASDAQ Global Market listing fee	125,000
FINRA filing fee	14,283
Printing and engraving expenses	250,000
Legal fees and expenses	1,714,307
Accounting fees and expenses	1,530,917
Transfer agent fees and expenses	3,500
Miscellaneous costs	101,343
Total	<u>\$3,750,000</u>

All amounts in the table are estimates except the U.S. Securities and Exchange Commission registration fee, the NASDAQ listing fee and the FINRA filing fee. The Company will pay all of the expenses of this offering.

Item 14. Indemnification of Directors and Officers

Under Swiss law, a corporation may indemnify its directors or officers against losses and expenses (except for such losses and expenses arising from willful misconduct or negligence, although legal scholars advocate that at least gross negligence be required), including attorney's fees, judgments, fines and settlement amounts actually and reasonably incurred in a civil or criminal action, suit or proceeding by reason of having been the representative of, or serving at the request of, the corporation.

Subject to Swiss law, Article 29 of our articles of association provides for indemnification of the existing and former members of our board of directors, executive management, and their heirs, executors and administrators, against liabilities arising in connection with the performance of their duties in such capacity, and permits us to advance the expenses of defending any act, suit or proceeding to members of our board of directors and executive management.

In addition, under general principles of Swiss employment law, an employer may be required to indemnify an employee against losses and expenses incurred by such employee in the proper execution of their duties under the employment agreement with the company.

We intend to enter into indemnification agreements with each of the members of our board of directors and executive officers in the form to be filed as an exhibit to this Registration Statement upon the closing of this offering.

In the underwriting agreement that we enter into in connection with the sale of the common shares being registered hereby, a form of which will be filed as Exhibit 1.1 to this Registration Statement, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act of 1933, as amended, the Securities Act, against certain liabilities.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Company, the Company has been advised that, in the opinion of the U.S. Securities and Exchange Commission, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Item 15. Recent Sales of Unregistered Securities

The following sets forth information regarding all unregistered securities sold during the last three fiscal years. Within the last three years, the registrant has issued and sold the following securities:

1. Since October 31, 2013, the registrant issued and sold 3,559,985 common shares for aggregate consideration of CHF 106,800.
2. On November 5, 2013, the registrant issued and sold 440,001 of its Series A-1 Preferred Shares for aggregate consideration of approximately CHF 501,600.
3. On May 6, 2014, the registrant issued and sold 3,120,001 of its Series A-2 Preferred Shares for aggregate consideration of approximately CHF 9.5 million.
4. On April 14, 2015, the registrant issued and sold 10,758,006 of its Series A-3 Preferred Shares for aggregate consideration of approximately \$45.7 million.
5. On March 24, 2015, the registrant issued 1,968,095 common shares in exchange for 4,600 ordinary shares of TRACR Hematology Limited and the assignment of certain rights to subscribe for ordinary shares of TRACR Hematology Limited.
6. On May 4, 2015, the registrant issued and sold 4,519,016 of its Series B Preferred Shares for aggregate consideration of approximately CHF 28.0 million.
7. On January 29, 2016, the registrant issued 5,464,608 of its Series B Preferred Shares in connection with the conversion of outstanding convertible loans with aggregate principal and accrued interest of approximately \$73.4 million.
8. On June 10, 2016, the registrant issued 2,834,252 of its Series B Preferred Shares for aggregate consideration of approximately \$38.1 million.
9. Since April 15, 2015, the registrant issued options to purchase 3,765,927 shares of its common shares to its employees at a weighted-average exercise price of \$6.58.

We deemed the offers, sales and issuances of the securities described in paragraphs (1) through (8) above to be exempt from registration under the Securities Act, in reliance on Section 4(a)(2) of the Securities Act, regarding transactions by an issuer not involving a public offering. All purchasers of securities in transactions exempt from registration pursuant to Section 4(a)(2) represented to us that they were acquiring the shares for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time. The purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

We deemed the issuances of our common stock and options to purchase common stock in paragraph (9) to be exempt from registration under the Securities Act either in reliance on Rule 701 of the Securities Act as offers and sales of securities under compensatory benefit plans and contracts relating to compensation in compliance with Rule 701, or in reliance on Section 4(a)(2), as transactions by an issuer not involving a public offering. Each of the recipients of securities in any transaction exempt from registration either received or had adequate access, through employment, business or other relationships, to information about us.

There were no underwritten offerings employed in connection with any of the transactions set forth above.

Item 16. Exhibits and Financial Statement Schedules.

- (a) Exhibits. See the Exhibit Index attached to this Registration Statement, which is incorporated by reference herein.
- (b) Financial Statement Schedules. Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

1. For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.
2. For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

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 on Form S-1 and has duly caused this Amendment No. 2 to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Basel, Switzerland on October 14, 2016.

CRISPR THERAPEUTICS AG

By: /s/ Rodger Novak

Name: Rodger Novak, M.D.

Title: Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons on the date indicated below in the capacities indicated:

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Rodger Novak</u> Rodger Novak, M.D.	Chief Executive Officer (principal executive officer)	October 14, 2016
<u>/s/ Marc A. Becker</u> Marc A. Becker	Chief Financial Officer (principal financial officer and principal accounting officer)	October 14, 2016
<u>*</u> N. Anthony Coles, M.D.	Chairman and Director	October 14, 2016
<u>*</u> Ali Behbahani, M.D.	Director	October 14, 2016
<u>*</u> Bradley Bolzon, Ph.D.	Director	October 14, 2016
<u>*</u> Simeon J. George, M.D.	Director	October 14, 2016
<u>*</u> Kurt von Emster	Director	October 14, 2016
<u>*</u> Thomas Woiwode, Ph.D.	Director	October 14, 2016
<u>*</u> Pablo Cagnoni, M.D.	Director	October 14, 2016
<u>/s/ Marc A. Becker</u> Marc A. Becker	Authorized Representative in the United States	October 14, 2016

*By: /s/ Marc A. Becker
 Marc A. Becker
Attorney-in-fact

EXHIBIT INDEX

The following documents are filed as part of this registration statement:

- 1.1* Form of Underwriting Agreement
- 3.1* Form of Articles of Association
- 4.1* Subscription Agreement, dated December 19, 2015, by and between CRISPR Therapeutics AG and Bayer Global Investments B.V.
- 5.1 Opinion of Vischer AG, Swiss counsel of CRISPR Therapeutics AG, as to the validity of the common shares
- 8.1 Opinion of Vischer AG, Swiss counsel of CRISPR Therapeutics AG, as to Swiss tax matters
- 10.1†* Joint Venture Agreement, dated December 19, 2015, between CRISPR Therapeutics AG and Bayer HealthCare LLC
- 10.2†* IP Contribution Agreement, dated March 16, 2016, by and between CRISPR Therapeutics AG, Bayer HealthCare LLC and Casebia Therapeutics LLP
- 10.3†* Option Agreement, dated March 16, 2016, by and between CRISPR Therapeutics AG, Bayer HealthCare LLC and Casebia Therapeutics LLP
- 10.4†* Strategic Collaboration, Option and License Agreement, dated October 26, 2015, by and among CRISPR Therapeutics AG, CRISPR Therapeutics Limited, CRISPR Therapeutics, Inc., TRACR Hematology Limited, Vertex Pharmaceuticals, Incorporated and Vertex Pharmaceuticals (Europe) Limited
- 10.5†* License Agreement, dated April 15, 2014, by and between CRISPR Therapeutics AG and Emmanuelle Marie Charpentier
- 10.6†* License Agreement, dated April 15, 2014, by and between TRACR Hematology Limited and Emmanuelle Marie Charpentier
- 10.7†* Patent Assignment Agreement, dated November 7, 2014, by and between CRISPR Therapeutics AG, Emmanuelle Marie Charpentier, the University of Vienna and Ines Fonfara
- 10.8* Form of Indemnification Agreement
- 10.9* Registration Rights Agreement, dated June 10, 2016, by and among CRISPR Therapeutics AG and certain shareholders
- 10.10* Employment Agreement, dated October 6, 2016, by and between CRISPR Therapeutics AG and Rodger Novak
- 10.11* Amended and Restated Employment Agreement, dated October 6, 2016, by and between CRISPR Therapeutics, Inc. and Marc A. Becker
- 10.12* Employment Agreement, dated October 6, 2016, by and between CRISPR Therapeutics, Inc. and Samarth Kulkarni
- 10.13* Amended and Restated Employment Agreement, dated October 6, 2016, by and between CRISPR Therapeutics, Inc. and Sven Ante Lundberg
- 10.14* CRISPR Therapeutics AG 2015 Stock Option and Grant Plan
- 10.15* CRISPR Therapeutics AG 2016 Stock Option and Incentive Plan
- 10.16* CRISPR Therapeutics AG 2016 Employee Stock Purchase Plan
- 10.17* Consent to Sublease, dated May 16, 2016, by and between CRISPR Therapeutics, Inc and Pfizer Inc.
- 21.1* Subsidiaries of the Registrant

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- 23.1* Consent of Ernst & Young LLP
 - 23.2* Consent of Vischer AG, Swiss counsel of CRISPR Therapeutics AG (included in Exhibit 5.1)
 - 23.3* Consent of Vischer AG, Swiss counsel of CRISPR Therapeutics AG (included in Exhibit 8.1)
 - 24.1* Powers of attorney

* Previously filed.

† Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment and this exhibit has been filed separately with the SEC.

Registered

CRISPR Therapeutics AG
 Aeschenvorstadt 36
 4051 Basel

Basel, October 14, 2016

CRISPR Therapeutics AG – Registration Statement on Form S-1

Dear Sir or Madam,

This opinion is being rendered at the request of CRISPR Therapeutics AG (the “**Company**”) in connection with the filing of a registration statement on Form S-1 on September 9, 2016 (the “**Registration Statement**”) for the purpose of registering under the United States Securities Act of 1933, as amended (the “**Securities Act**”), the offer and sale of such number of common shares of CHF 0.03 par value each of the Company as authorized by the Shareholders Resolution (as defined below), including any additional shares with a nominal value of CHF 0.03 sold or, if and to the extent such option is exercised, to be sold to the underwriters pursuant to the over-allotment option granted by the Company to the underwriters (together the “**Shares**”). As such counsel, we have been requested to render an opinion as to certain matters of Swiss law.

VISCHER Ltd

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Civil Law Notaries in
 Basel-City

I. BASIS OF OPINION

This opinion is confined to and given on the basis of the laws of Switzerland in force at the date hereof and as currently applied by Swiss courts. In the absence of statutory or established case law, we base our opinion on our independent professional judgement.

This opinion is also confined to the matters stated herein and is not to be read as extending, by implication or otherwise, to any other matter.

For the purpose of giving this opinion, we have examined such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below, including but not limited to the following documents:

- a) a pdf copy of the Registration Statement dated as of 9 September 2016;
- b) an original copy of the notarized articles of association (*Statuten*) of the Company dated 19 July 2016 (the “**Articles**”), as filed with the Commercial Register of the Canton of Basel-City;
- c) an excerpt from the Commercial Register of the Canton of Basel-Stadt in respect of the Company, certified by such Commercial Register to be up-to-date as of 28 July 2016 (the “**Excerpt**”);
- d) a pdf copy of the notarized resolution of the general meetings of the shareholders and of the holders of preferred shares of the Company, both dated 19 July 2016 (the “**Shareholders Resolution**”) and regarding, among others, the authorization (the “**Authorization**”) granted to the board of directors of the Company (the “**Board**”) to (i) increase the share capital of the Company by an amount up to CHF 491'970.15 (the “**Capital Increase**”), (ii) issue up to 16'399'005 shares of a nominal value of CHF 0.03 each and (iii) adapt the Articles accordingly; and
- e) such other certificates of the officers of the Company.

The documents referred to above in paragraphs a) to e) are referred to together as the “**Documents**”.

No documents have been reviewed by ourselves in connection with this opinion other than those listed above. Accordingly, our opinion is limited to the above Documents and their legal implications under Swiss law.

All terms used in this opinion in uppercase form shall have the meaning ascribed to them in the Registration Statement, unless otherwise defined herein.

II. ASSUMPTIONS

In rendering the opinion below, we have assumed:

- a) the conformity to the Documents of all documents produced to us as copies, fax copies or via e-mail, and that the original was executed in the manner appearing on the copy of the draft;
- b) the genuineness and authenticity of the signatures on all copies of the original Documents thereof which we have examined; and
- c) to the extent relevant for purposes of this opinion, all factual information contained in, or material statements given in connection with, the Documents are true, complete and accurate.

III. OPINION

Based upon the foregoing and subject to the qualifications set out below, we are of the opinion that the Shares, when sold and upon registration of the corresponding share capital increase into the Commercial Register of the Canton of Basel-Stadt, will be validly issued, fully paid-in (up to their nominal amount) and non-assessable (which term means when used herein that no further contributions have to be made by the holders of the Shares).

IV. QUALIFICATIONS

This opinion is subject to the following qualifications:

- a) This opinion is limited to matters of Swiss law as in force on the date hereof and as applied and construed by the courts of Switzerland.
- b) The opinion set forth herein is limited to the matters specifically addressed herein, and no other opinion or opinions are expressed or may be implied or inferred. In particular we express no opinion as to any commercial, calculating, auditing or other non-legal matters. Further, we express no opinion as to tax law.

* * *

We have rendered this opinion as of the date hereof and we assume no obligation to advise you of changes that may thereafter be brought to our attention.

In this opinion, Swiss legal concepts are expressed in English terms and not in their original terms. The concepts concerned may not be identical to the concepts described by the same English terms as they exist under the laws of other jurisdictions. All liability and other matters relating to this opinion shall be governed exclusively by Swiss law.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the references to us under the heading "Legal Matters" contained in the Registration Statement. 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 Securities Act.

Very truly yours,

VISCHER AG

/s/ Dr. Matthias Staehelin

Dr. Matthias Staehelin

VISCHER Ltd

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Civil Law Notaries in
Basel-City

CRISPR Therapeutics AG
Aeschenvorstadt 36
4051 Basel

Basel, October 14, 2016

CRISPR Therapeutics AG –Registration Statement on Form S-1

Dear Sirs,

This opinion is being rendered at the request of the Company in connection with the Registration Statement on Form S-1 filed with the U.S. Securities and Exchange Commission on September 9, 2016, (the “Registration Statement”), which term does not include any other document or agreement whether or not specifically referred to therein or attached as an exhibit or schedule thereto). As such counsel, we have been requested to render an opinion as to certain matters of Swiss law.

I. DOCUMENTS

This opinion is confined to and given on the basis of the laws of Switzerland in force at the date hereof and as currently applied by the Swiss courts. In the absence of statutory or established case law, we base our opinion on our independent professional judgement.

This opinion is also confined to the matters stated herein and is not to be read as extending, by implication or otherwise, to any other matter.

For the purpose of giving this opinion, we have examined such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below, including but not limited to:

- a) a pdf copy of the Registration Statement; and
- b) certain certificates of the officers of the Company.

All terms used in this opinion in uppercase form shall have the meaning ascribed to them in the Registration Statement, unless otherwise defined herein.

II. ASSUMPTIONS

In rendering the opinion below, we have assumed:

- a) the offering and sale of the shares being registered by the Registration Statement will be conducted in the manner as described in the Registration Statement; and
- b) to the extent relevant for purposes of this opinion, all factual information contained in, or material statements given in connection with, the Registration Statement are true, complete and accurate.

III. OPINION

Based upon the foregoing and subject to the qualifications set out below, we hereby confirm that as of the date hereof the discussion in the Registration Statement contained under the heading "Taxation—Swiss Tax Considerations" insofar as it addresses matters of Swiss tax law or considerations, represents our opinion with respect to and limited to the matters referred to therein.

IV. QUALIFICATIONS

This opinion is subject to the following qualifications:

- a) This opinion is limited to matters of Swiss law as in force on the date hereof and as applied and construed by the courts of Switzerland.
- b) The opinion set forth herein is limited to the matters specifically addressed herein, and no other opinion or opinions are expressed or may be implied or inferred.
- c) Except as expressly stated herein, we express no opinion as to any other legal matters. We express no opinion as to any non-legal matters.

We have rendered this opinion as of the date hereof and we assume no obligation to advise you of changes that may thereafter be brought to our attention.

In this opinion, Swiss legal concepts are expressed in English terms and not in their original terms. The concepts concerned may not be identical to the concepts described by the same English terms as they exist under the laws of other jurisdictions. All liability and other matters relating to this opinion shall be governed exclusively by Swiss law.

This opinion is an exhibit to the Registration Statement and may be relied upon for the purpose of the registration pursuant to the Registration Statement. It may not be supplied, and its contents or existence may not be disclosed, to any person other than as an Exhibit to (and therefore together with) the Registration Statement and may not be relied upon for any purpose other than the registration pursuant to the Registration Statement.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the references to us under the heading "Legal Matters" contained in the Registration Statement. 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 Securities Act.

Very truly yours,

VISCHER AG

/s/ Nadia Tarolli

Nadia Tarolli