

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

**FORM S-8
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)

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

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)

CRISPR Therapeutics AG 2015 Stock Option and Grant Plan
CRISPR Therapeutics AG 2016 Stock Option and Incentive Plan
CRISPR Therapeutics AG 2016 Employee Stock Purchase Plan
Non-Qualified Option Agreement with Megan Menner
Non-Qualified Option Agreement with Paul Schneider
Non-Qualified Option Agreement with Pablo Cagnoni
(Full title of the plans)

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

Marc A. Becker
Chief Financial Officer
CRISPR Therapeutics AG
200 Sidney Street
Cambridge, MA 02139

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

CALCULATION OF REGISTRATION FEE

| Title of Securities to be Registered | Amount to be Registered (1) | Proposed Maximum Offering Price per Share | Proposed Maximum Aggregate Offering Price | Amount of Registration Fee |
|--------------------------------------|-----------------------------|---|---|----------------------------|
| Common Shares, CHF .03 per share: | | | | |
| 2015 Stock Option and Grant Plan | 3,548,998(2) | \$4.14(3) | \$14,692,851.72 | \$1,702.90 |
| 2016 Stock Option and Incentive Plan | 6,891,779(4) | \$14.00(5) | \$96,484,906.00 | \$11,182.60 |

| | | | | |
|--------------------------------------|------------|------------|------------------|-------------|
| 2016 Stock Option and Incentive Plan | 380,000(6) | \$14.00(7) | \$5,320,000.00 | \$616.59 |
| Option Agreement with Megan Menner | 150,000 | \$12.57(8) | \$1,885,500.00 | \$218.53 |
| Option Agreement with Paul Schneider | 16,666 | \$12.57(8) | \$209,491.62 | \$24.28 |
| Option Agreement with Pablo Cagnoni | 40,263 | \$12.57(8) | \$506,105.91 | \$58.66 |
| 2016 Employee Stock Purchase Plan | 413,226 | \$11.90(9) | \$4,917,389.40 | \$569.93 |
| Total | 11,440,932 | | \$124,016,244.65 | \$14,373.48 |

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement shall also cover any additional common shares which become issuable under the above-named plans by reason of any stock dividend, stock split, recapitalization or any other similar transaction effected without the receipt of consideration which results in an increase in the number of our outstanding shares of common stock. Pursuant to Rule 416(c) under the Securities Act, this Registration Statement shall also cover an indeterminate amount of interests to be offered or sold pursuant to the employee benefit plans described herein.
- (2) Represents 3,548,998 common shares subject to outstanding awards under the CRISPR Therapeutics AG 2015 Stock Option and Grant Plan (the “2015 Plan”) as of October 19, 2016. Any such common shares that are subject to awards outstanding under the 2015 Plan as of the effective date of the CRISPR Therapeutics AG 2016 Stock Option and Incentive Plan (the “2016 Plan”) which are forfeited or lapse unexercised will be available for future issuance under the 2016 Plan.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) of the Securities Act, and based on \$4.14, the exercise price (rounded to the nearest cent) of the outstanding option awards as of October 19, 2016.
- (4) Represents 6,891,799 common shares available for future issuance under the 2016 Plan as of October 19, 2016.
- (5) Estimated in accordance with Rule 457(c) and 457(h) of the Securities Act for purposes of calculating the registration fee, the Proposed Maximum Offering Price Per Share is \$14.00, which is the initial public offering price set forth on the cover page of the Registrant’s prospectus dated October 18, 2016, relating to its initial public offering.
- (6) Represents 380,000 common shares subject to outstanding awards under the 2016 Plan as of October 19, 2016. Any.
- (7) Estimated pursuant to Rule 457(h) based on \$14.00, the weighted average exercise price of the outstanding awards as of October 19, 2016.
- (8) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) of the Securities Act, and based on \$12.57, the weighted average exercise price of the outstanding option awards.
- (9) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457 of the Securities Act, and based on 85% of \$14.00, the initial public offering price of the registrant’s common shares set forth on the cover page of the registrant’s prospectus dated October 18, 2016 relating to its initial public offering. Pursuant to the 2016 ESPP, the purchase price of the common shares reserved for issuance thereunder will be 85% of the fair market value of a common share on the first trading day of the offering period or on the exercise date, whichever is less.

Part I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. Plan Information.

The documents containing the information specified in this Item 1 will be sent or given to participants as specified by Rule 428(b)(1) under the Securities Act. In accordance with the rules and regulations of the Commission and the instructions to Form S-8, such documents are not being filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act.

Item 2. Registrant Information and Employee Plan Annual Information.

The documents containing the information specified in this Item 2 will be sent or given to participants as specified by Rule 428(b)(1) under the Securities Act. In accordance with the rules and regulations of the Commission and the instructions to Form S-8, such documents are not being filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act.

Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The registrant hereby incorporates by reference into this Registration Statement the following documents filed with the SEC:

- (a) The prospectus filed by the registrant with the SEC pursuant to Rule 424(b) under the Securities Act, on October 19, 2016, relating to the Registration Statement on Form S-1, as amended (File No. 333-213577), which contains the registrant's audited financial statements for the latest fiscal year for which such statements have been filed; and
- (b) The description of the registrant's common shares contained in the registrant's Registration Statement on Form 8-A (File No. 001-37923), filed by the registrant with the SEC under Section 12(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), on October 18, 2016, including any amendments or reports filed for the purpose of updating such description.

All documents that the registrant subsequently files pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act prior to the filing of a post-effective amendment to this registration statement which indicates that all of the common shares offered have been sold or which deregisters all of such shares then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be a part hereof from the date of the filing of such documents.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

Under no circumstances will any information filed under current items 2.02 or 7.01 of Form 8-K be deemed incorporated herein by reference unless such Form 8-K expressly provides to the contrary.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. 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 the registrant's articles of association provides for indemnification of the existing and former members of the registrant's 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 the registrant 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.

The registrant has entered into indemnification agreements with each of its members of the board of directors and executive officers.

The registrant has purchased and maintains insurance on behalf of any person who is or was a director or officer against any loss arising from any claim asserted against him or her and incurred by him or her in that capacity, subject to certain exclusions and limits of the amount of coverage.

These indemnification provisions and the indemnification agreements entered into between the registrant and its officers and directors may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

See the Exhibit Index on the page immediately preceding the exhibits for a list of exhibits filed as part of this registration statement, which Exhibit Index is incorporated herein by reference.

Item 9. Undertakings.

(a) The registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act.

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

Provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) herein do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act (15 U.S.C. 78m or 78o(d)) that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment 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.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement 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.

(h) 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 Securities and Exchange Commission 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 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.

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-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Boston, Commonwealth of Massachusetts on October 20, 2016.

CRISPR THERAPEUTICS AG

By: /s/ Rodger Novak, M.D.
Name: Rodger Novak, M.D.
Title: *Chief Executive Officer*

KNOW ALL BY THESE PRESENT, that each individual whose signature appears below hereby constitutes and appoints each of Rodger Novak, M.D. and Marc A. Becker, as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof.

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, M.D.</u> Rodger Novak, M.D. | Chief Executive Officer (principal executive officer) | October 20, 2016 |
| <u>/s/ Marc A. Becker</u> Marc A. Becker | Chief Financial Officer (principal financial officer and principal accounting officer) | October 20, 2016 |
| <u>/s/ N. Anthony Coles, M.D.</u> N. Anthony Coles, M.D. | Chairman and Director | October 20, 2016 |
| <u>/s/ Ali Behbahani, M.D.</u> Ali Behbahani, M.D. | Director | October 20, 2016 |
| <u>/s/ Bradley Bolzon, Ph.D.</u> Bradley Bolzon, Ph.D. | Director | October 20, 2016 |
| <u>/s/ Simeon J. George, M.D.</u> Simeon J. George, M.D. | Director | October 20, 2016 |
| <u>/s/ Kurt von Emster</u> Kurt von Emster | Director | October 20, 2016 |
| <u>/s/ Thomas Woiwode, Ph.D.</u> Thomas Woiwode, Ph.D. | Director | October 20, 2016 |
| <u>/s/ Pablo Cagnoni, M.D.</u> Pablo Cagnoni, M.D. | Director | October 20, 2016 |
| <u>/s/ Marc A. Becker</u> Marc A. Becker | Authorized Representative in the United States | October 20, 2016 |

EXHIBIT INDEX

| <u>Exhibit Number</u> | <u>Description</u> |
|-----------------------|--|
| 4.1(1) | Form of Articles of Association. |
| 4.2(2) | 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. |
| 23.1 | Consent of Ernst & Young LLP. |
| 23.2 | Consent of Vischer (included in Exhibit 5.1). |
| 24.1 | Power of Attorney (included on the signature page). |
| 99.1(3) | CRISPR Therapeutics AG 2015 Stock Option and Grant Plan. |
| 99.2(4) | CRISPR Therapeutics AG 2016 Stock Option and Incentive Plan. |
| 99.3(5) | CRISPR Therapeutics AG 2016 Employee Stock Purchase Plan. |

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- (1) Filed as Exhibit 3.1 to Registrant's Registration Statement on Form S-1 (File No. 333-213577), filed with the U.S. Securities and Exchange Commission on September 9, 2016, and incorporated herein by reference.
 - (2) Filed as Exhibits 4.1 to Registrant's Registration Statement on Form S-1 (File No. 333-213577), filed with the U.S. Securities and Exchange Commission on September 9, 2016, and incorporated herein by reference.
 - (3) Filed as Exhibit 10.14 to Registrant's Registration Statement on Form S-1 (File No. 333-213577), filed with the U.S. Securities and Exchange Commission on September 9, 2016, and incorporated herein by reference.
 - (4) Filed as Exhibits 10.15 to Registrant's Registration Statement on Form S-1 (File No. 333-213577), filed with the U.S. Securities and Exchange Commission on September 9, 2016, and incorporated herein by reference.
 - (5) Filed as Exhibits 10.16 to Registrant's Registration Statement on Form S-1 (File No. 333-213577), filed with the U.S. Securities and Exchange Commission on September 9, 2016, and incorporated herein by reference.

Registered

CRISPR Therapeutics AG
Aeschenvorstadt 36
4051 Basel

Basel, October 20, 2016

CRISPR Therapeutics AG – Registration Statement on Form S-8

Dear Sir or Madam,

This opinion is being rendered at the request of CRISPR Therapeutics AG (the “**Company**”) in connection with the Registration Statement on Form S-8 filed with the U.S. Securities and Exchange Commission on October 20, 2016 (the “**Form S-8**”, 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) relating to the registration under the United States Securities Act of 1933, as amended (the “**Securities Act**”), of common shares in the Company, each share currently having a par value of CHF 0.03 (the “**Shares**”), which may be issued from time to time under the Plans (as defined below). As such counsel, we have been requested to render an opinion as to certain matters of Swiss law.

We understand that the Company is party to the following plans:

- (i) CRISPR Therapeutics AG 2015 Stock Option and Grant Plan (the “**2015 Plan**”);
- (ii) CRISPR Therapeutics AG 2016 Stock Option and Incentive Plan (the “**2016 Option Plan**”);
- (iii) CRISPR Therapeutics AG 2016 Employee Stock Purchase Plan (the “**2016 Purchase Plan**”);
- (iv) Non-Qualified Option Agreement with Megan Menner (the “**Menner Agreement**”);
- (v) Non-Qualified Option Agreement with Paul Schneider (the “**Schneider Agreement**”);
- (vi) Non-Qualified Option Agreement with Pablo Cagnoni (the “**Cagnoni Agreement**” and together with the 2015 Plan, the 2016 Option Plan, the 2016 Purchase Plan, the Menner Agreement and the Schneider Agreement, the “**Plans**”)

VISCHER Ltd

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Fax +41 58 211 33 10

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CH-8021 Zurich
Switzerland
Phone +41 58 211 34 00
Fax +41 58 211 34 10

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 only examined the following documents:

- a) an original excerpt from the register of commerce of the Canton of Basel-City with regard to the Company certified by such register of commerce as of 20 October 2016 (the “**Excerpt**”);
- b) an original copy of the notarized articles of association (*Statuten*) of the Company dated 20 October 2016 (the “**Articles**”), as filed with the Commercial Register of the Canton of Basel-City;
- c) a pdf copy of the Plans;
- d) a pdf copy of the resolutions of the board of directors of the Company (the “Board”) held on 9 April 2015, 17 December 2015 and on 24 May 2016 with respect to the 2015 Plan (the “**2015 Plan Resolutions**”);
- e) a pdf copy of the resolution of the Board held on 3 June 2016 with respect to the 2016 Option Plan (the “**2016 Option Plan Resolution**”);
- f) a pdf copy of the resolution of the Board held on 3 June 2016 with respect to the 2016 Purchase Plan (the “**2016 Purchase Plan Resolution**”);
- g) a pdf copy of the resolution of the Board held on 19 August 2016 with respect to Grant of Options to Purchase Common Shares from 2015 Stock Option and Grant of Options to Purchase Common Shares from Corporation’s Treasury Shares.

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

We have further examined such other records, documents and other instruments as we have deemed necessary or advisable for the purposes of rendering this opinion.

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;
- c) the legal capacity, power and authority of each of the parties (other than the Company) to enter into and perform its obligations under the Plans as well as the due authorization, execution and delivery of the Plans or any document thereunder by each of the parties thereto (including the Company) and that all consents or approvals from and filings, registrations and notifications with or to all governmental authorities (other than in Switzerland) required in connection with the execution, delivery and performance of the Plans have been obtained or made and are in full force and effect;
- d) the Plans are in full force and effect, have not been rescinded, either in whole or in part, by the Board and that there is no matter affecting the authority of the Board to approve the adoption or assumption of the Plans and filing of the registration statement which would have any adverse implication in relation to the opinions expressed herein;
- e) the Plans constitute legal, valid, binding and enforceable obligations of the Company under the governing law;
- f) all authorizations, approvals, consents, licenses, exemptions and other requirements, other than those required under the laws of Switzerland, for the legality, validity and enforceability of the Plans have been duly obtained and are and will remain in full force and effect;
- g) the exercise of the options under the Plans will be conducted in writing in the manner described in the Plans;
- h) the exercise price of any option granted is at least the current par value of CHF 0.03 per Share and is paid by the option holder to the Company;
- i) at the time of any issuance of Shares under the Plans, the Company will have according to article 3c of the Articles of Association sufficient conditional share capital to issue the required number of new Shares to be delivered to option holders exercising options granted under the Plans; and
- j) that (i) the requisite reports of the Company's auditors according to article 653f of the Swiss Code of Obligations (the "SCO"), (ii) the amendments of the Articles of Association according to article 653g SCO, and (iii) the entry of the corresponding share capital increase into the Commercial Register of the Canton of Basel-City will be given or made.

III. OPINION

Based upon the foregoing and subject to the qualifications set out below, we are of the opinion that:

- a) The Company is duly incorporated and validly existing as a corporation (*Aktiengesellschaft*) under the laws of Switzerland, having unlimited corporate existence and the capacity to carry out its business, to own its property and to sue and to be sued in its own name.
- b) The Shares when issued and paid for in accordance with the Articles of Association and, provided the issue price for such Shares has been fully paid-in, will be validly issued, fully paid-in 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. We have not investigated the laws of any jurisdiction other than Switzerland, any representations and warranties made by the parties to the Plans or any matters of fact.
- 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.
- c) We express no opinion as to the accuracy or completeness of the information contained in the Form S-8.

* * *

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.

[signature page to follow]

We hereby consent to the filing of this opinion as an exhibit to the Form S-8. 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

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the CRISPR Therapeutics AG 2015 Stock Option and Grant Plan, the CRISPR Therapeutics AG 2016 Stock Option and Incentive Plan, the CRISPR Therapeutics AG 2016 Employee Stock Purchase Plan, the Non-Qualified Option Agreement with Megan Menner, the Non-Qualified Option Agreement with Paul Schneider, and the Non-Qualified Option Agreement with Pablo Cagnoni of CRISPR Therapeutics AG of our report dated May 13, 2016 (except note 17, as to which the date is July 26, 2016), with respect to the consolidated financial statements of CRISPR Therapeutics AG included in its Registration Statement (Form S-1 No. 333-213577) and the related Prospectus, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts
October 19, 2016