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

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**FORM 8-K**

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**CURRENT REPORT  
Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): September 19, 2018**

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**CRISPR THERAPEUTICS AG**

(Exact Name of Company as Specified in Charter)

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**Switzerland**  
(State or Other Jurisdiction  
of Incorporation)

**001-37923**  
(Commission  
File Number)

**Not Applicable**  
(IRS Employer  
Identification No.)

**Baarerstrasse 14  
6300 Zug  
Switzerland  
+41 61 228 7800**

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

**Not applicable**  
(Former Name or Former Address, if Changed Since Last Report)

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 or Rule 12b-2 of the Securities Exchange Act of 1934.

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 13(a) of the Exchange Act.

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### Item 1.01 Entry into a Material Definitive Agreement.

On September 20, 2018, CRISPR Therapeutics AG (the “Company”) entered into an Underwriting Agreement (the “Underwriting Agreement”) with Goldman Sachs & Co. LLC, Piper Jaffray & Co., and Barclays Capital Inc., as representatives of the underwriters named therein (collectively, the “Underwriters”), relating to the public offering (the “Offering”) of 4,210,526 common shares of the Company, CHF 0.03 per share (the “Common Shares”), at a price to the public of \$47.50 per share (the “Offering Price”), less underwriting discounts and commissions. The net proceeds to the Company from the sale of the Common Shares, after deducting the underwriting discounts and commissions and other estimated offering expenses payable by the Company, is expected to be approximately \$187.5 million. The Offering is expected to close on September 25, 2018, subject to the satisfaction of customary closing conditions. In addition, the Underwriters have a 30-day option to purchase up to an additional 631,578 Common Shares at the Offering Price, of which up to 100,000 shares may be sold by the selling shareholder at the Offering Price less the underwriting discount.

The Offering was made pursuant to the Company’s effective automatic shelf registration statement on Form S-3 (File No. 333-227427), including the prospectus dated September 19, 2018, as supplemented by a prospectus supplement dated September 20, 2018, filed on September 21, 2018.

In the Underwriting Agreement, the Company makes customary representations, warranties and covenants and also agrees to indemnify the Underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended, or to contribute to payments that the Underwriters may be required to make because of such liabilities.

In connection with the Offering, the Company’s board of directors resolved that it was in the best interests of its shareholders to exclude their pre-emptive rights in the Offering in order to facilitate a “fast and flexible” public offering which likely could not be effected without the exclusion of the statutory pre-emptive right of the Company’s existing shareholders. Based on the Offering Price and the discount it represents to the closing price of the Company’s Common Shares on September 20, 2018, the Company’s board of directors has determined that the Company will not need to grant its shareholders subscription rights after the conclusion of the Offering, to allow them to purchase their pro rata portion of shares as if they had participated in this offering.

The foregoing is only a brief description of the terms of the Underwriting Agreement, does not purport to be a complete description of the rights and obligations of the parties thereunder, and is qualified in its entirety by reference to the Underwriting Agreement that is filed as Exhibit 1.1 to this Current Report on Form 8-K and incorporated by reference herein. The legal opinion of VISCHER AG relating to the legality of the issuance and sale of the shares in the Offering is attached as Exhibit 5.1 to this Current Report on Form 8-K.

### Item 8.01 Other Events.

On September 19, 2018, the Company issued a press release announcing the Offering. On September 20, 2018, the Company issued a press release announcing the pricing of the Offering. Copies of these press releases are attached hereto as Exhibits 99.1 and 99.2, respectively, and are each incorporated herein by reference.

### Item 9.01. Financial Statements and Exhibits.

(d) Exhibits:

| <u>Exhibit No.</u> | <u>Description</u>   |
|--------------------|--|
| 1.1                | <a href="#">Underwriting Agreement, dated as of September 20, 2018, among CRISPR Therapeutics AG and Goldman Sachs &amp; Co. LLC, Piper Jaffray &amp; Co. and Barclays Capital Inc. as representatives of the underwriters named therein</a> |
| 5.1                | <a href="#">Opinion of VISCHER AG</a>  |
| 23.1               | <a href="#">Consent of VISCHER AG (included in Exhibit 5.1)</a>  |
| 99.1               | <a href="#">Press release issued by CRISPR Therapeutics AG on September 19, 2018</a>   |
| 99.2               | <a href="#">Press release issued by CRISPR Therapeutics AG on September 20, 2018</a>   |

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

CRISPR THERAPEUTICS AG

Date: September 21, 2018

By: /s/ Samarth Kulkarni, Ph.D.  
Samarth Kulkarni, Ph.D.  
Chief Executive Officer

## CRISPR THERAPEUTICS AG

4,210,526 Common Shares  
(nominal value CHF 0.03 per share)

## Underwriting Agreement

New York, New York  
September 20, 2018

Goldman Sachs & Co. LLC  
Piper Jaffray & Co.  
Barclays Capital Inc.

As Representatives of the several Underwriters,

c/o Goldman Sachs & Co. LLC  
200 West Street  
New York, New York 10282

c/o Piper Jaffray & Co.  
345 Park Avenue, Suite 1200  
New York, New York 10154

c/o Barclays Capital Inc.  
745 Seventh Avenue  
New York, New York 10019

Ladies and Gentlemen:

CRISPR Therapeutics AG, a stock corporation (*Aktiengesellschaft*) incorporated under the laws of Switzerland (the "Issuer"), proposes to sell to the several underwriters named in Schedule II hereto (the "Underwriters"), for whom you (the "Representatives") are acting as representatives, 4,210,526 common shares, nominal value CHF 0.03 per share ("Common Shares"), of the Issuer (said shares to be issued and sold by the Issuer being hereinafter called the "Underwritten Securities"). The Issuer and the person named in Schedule III hereto (the "Selling Shareholder") also propose to grant to the Underwriters an option to purchase up to the number of additional Common Shares set forth in Schedule I (the "Issuer Option Securities") and Schedule III (the "Selling Shareholder Option Securities"), respectively (the Issuer Option Securities and the Selling Shareholder Option Securities, together, hereinafter called the "Option Securities;" the Option Securities, together with the Underwritten Securities, hereinafter called the "Securities"). To the extent there are no additional Underwriters listed on Schedule II other than you, the term Representatives as used herein shall mean you, as Underwriters, and the terms Representatives, Underwriters and Selling Shareholders shall mean either the singular or plural as the context requires. Any reference herein to the Registration Statement, the Base Prospectus,

any Preliminary Prospectus or the Final Prospectus shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 which were filed under the Exchange Act on or before the Effective Date of the Registration Statement or the issue date of the Base Prospectus, any Preliminary Prospectus or the Final Prospectus, as the case may be; and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Final Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act after the Effective Date of the Registration Statement or the issue date of the Base Prospectus, any Preliminary Prospectus or the Final Prospectus, as the case may be, deemed to be incorporated by reference therein.

1. Representations and Warranties.

(i) The Issuer represents and warrants to, and agrees with, each Underwriter as set forth below:

(a) The Issuer meets the requirements for use of Form S-3 under the Securities Act and has prepared and filed with the Securities and Exchange Commission (the “SEC”) an automatic shelf registration statement, as defined in Rule 405, (file number 333-227427) on Form S-3, including exhibits and financial statements and any prospectus supplement relating to the Securities that is filed with the SEC pursuant to Rule 424(b) under the Securities Act (as defined herein) and deemed part of such registration statement pursuant to Rule 430B under the Securities Act, as amended on each Effective Date and, in the event any post-effective amendment thereto or any registration statement becomes effective prior to the First Closing Date, shall also mean such registration statement as so amended, as the case may be (the “Registration Statement”), including a related base prospectus contained in the Registration Statement at the Execution Time (the “Base Prospectus”), for registration under the Securities Act of 1933, as amended, and the rules and regulations of the SEC promulgated thereunder (the “Securities Act”) of the offering and sale of the Securities. Such Registration Statement, including any amendments thereto filed prior to the date and time that this agreement (the “Underwriting Agreement”) is executed and delivered by the parties hereto (the “Execution Time”), became effective upon filing. The Issuer may have filed with the SEC, as part of an amendment to the Registration Statement or pursuant to Rule 424(b), one or more preliminary prospectus supplements to the Base Prospectus relating to the Securities which is used prior to the filing of the Prospectus (together with the Base Prospectus, the “Preliminary Prospectus”), each of which has previously been furnished to you. The Issuer will file with the SEC a final prospectus supplement to the Base Prospectus relating to the Securities in accordance with Rule 424(b) after the Execution Time (together with the Base Prospectus, the “Final Prospectus”). As filed, such Final Prospectus shall contain all information required by the Securities Act and the rules thereunder and, except to the extent the Representatives shall agree in writing to a modification, shall be in all substantive respects in the form furnished to you prior to the Execution Time or, to the extent not completed at the Execution Time, shall contain only such specific additional information and other changes (beyond that contained in the latest Preliminary Prospectus) as the Issuer has advised you, prior to the Execution Time, will be included or made therein. The Registration Statement, at the Execution Time,

meets the requirements set forth in Rule 415(a)(1)(x). The initial Effective Date of the Registration Statement was not earlier than the date three years before the Execution Time;

(b) On each date and time that the Registration Statement and any post-effective amendment or amendments thereto became or becomes effective (the "Effective Date"), the Registration Statement did, and when the Final Prospectus is first filed in accordance with Rule 424(b) under the Securities Act and on the First Closing Date (as defined herein) and on any Option Closing Date (as defined herein), the Final Prospectus (and any supplement thereto) will, comply in all material respects with the applicable requirements of the Securities Act and the rules thereunder; on each Effective Date, at the Execution Time and on the First Closing Date and on any Option Closing Date, the Registration Statement did not and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading; and on the date of any filing pursuant to Rule 424(b) and on the First Closing Date and any Option Closing Date, the Final Prospectus (together with any supplement thereto) will not include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that the Issuer makes no representations or warranties as to the information contained in or omitted from the Disclosure Package or the Final Prospectus (or any supplement thereto) in reliance upon and in conformity with information furnished in writing to the Issuer by or on behalf of any Underwriter through the Representatives specifically for inclusion in the Disclosure Package or the Final Prospectus (or any supplement thereto), it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 8(b) hereof;

(c) The documents incorporated by reference in the Registration Statement, the Disclosure Package and the Final Prospectus, when they were filed with the SEC conformed in all material respects to the requirements of the Exchange Act, and none of such documents contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; and any further documents so filed and incorporated by reference to the Registration Statement, the Disclosure Package and the Final Prospectus, when such documents are filed with the SEC, will conform in all material respects to the requirements of the Exchange Act and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(d) The Issuer's shareholders held a shareholders' meeting on May 30, 2018, and, at such meeting, its shareholders resolved in the form of a public deed, *inter alia*, to create authorized share capital in the maximum amount of CHF 690,055.11 by issuing up to 23,001,837 Common Shares, which will have to be fully paid-in, and to authorize the Board of Directors of the Issuer (the "Board") to execute a capital increase out of such authorized share capital (*Ermächtigungsbeschluss*);

(e) All statutory preemptive rights to which the existing shareholders of the Issuer are entitled under Swiss law with respect to the capital increases described in Sections 3 and 4 have been validly set aside or waived;

(f) (i) At the time of filing the Registration Statement, (ii) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Securities Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Sections 13 or 15(d) of the Exchange Act or form of prospectus), (iii) at the time the Issuer or any person acting on its behalf (within the meaning, for this clause only, of Rule 163(c)) made any offer relating to the Securities in reliance on the exemption in Rule 163, and (iv) at the Execution Time (with such date being used as the determination date for purposes of this clause (iv)), the Issuer was or is (as the case may be) a “well-known seasoned issuer” as defined in Rule 405. The Issuer agrees to pay the fees required by the Commission relating to the Securities within the time required by Rule 456(b)(1) without regard to the proviso therein and otherwise in accordance with Rules 456(b) and 457(r).

(g) The “Disclosure Package” shall mean (i) the Base Prospectus, (ii) the Preliminary Prospectus used most recently prior to the Execution Time, (iii) any issuer free writing prospectus, as defined in Rule 433 under the Securities Act (the “Issuer Free Writing Prospectuses”), if any, identified in Schedule IV hereto, (iv) any other free writing prospectus, as defined in Rule 405 under the Securities Act (a “Free Writing Prospectus”) that the parties hereto shall hereafter expressly agree in writing to treat as part of the Disclosure Package and (v) the information set forth in Schedule I hereto. The (i) Disclosure Package and (ii) each electronic road show, when taken together as a whole with the Disclosure Package, does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The preceding sentence does not apply to statements in or omissions from the Disclosure Package based upon and in conformity with written information furnished to the Issuer by any Underwriter through the Representatives specifically for use therein, it being understood and agreed that the only such information furnished by or on behalf of any Underwriter consists of the information described as such in Section 8(b) hereof;

(h) (i) At the time of filing the Registration Statement and (ii) as of the Execution Time (with such date being used as the determination date for purposes of this clause (ii)), the Issuer was not and is not an ineligible issuer, as defined in Rule 405 under the Securities Act (an “Ineligible Issuer”), without taking account of any determination by the SEC pursuant to Rule 405 that it is not necessary that the Issuer be considered an Ineligible Issuer;

(i) From the time of initial filing of the Registration Statement with the SEC through the Execution Time, the Issuer has been and is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “Emerging Growth Company”);

(j) [Intentionally Deleted]

(k) Each Issuer Free Writing Prospectus does not include any information that conflicts with the information contained in the Registration Statement, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Issuer by any Underwriter through the Representatives specifically for use therein, it being understood and agreed that the only such information furnished by or on behalf of any Underwriter consists of the information described as such in Section 8 hereof;

(l) Each of the Issuer and its subsidiaries has been duly incorporated and is validly existing as a corporation in good standing (to the extent such concept is applicable) under the laws of the jurisdiction in which it is chartered or organized with full corporate power and authority to own or lease, as the case may be, and to operate its properties and conduct its business as described in the Disclosure Package and the Final Prospectus, and is duly qualified to do business as a foreign corporation and is in good standing under the laws of each jurisdiction which requires such qualification, except where the failure to qualify would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect (as defined below);

(m) All the outstanding shares of capital stock of each subsidiary have been duly and validly authorized and issued and are fully paid and non-assessable (which term means when used herein that no further contributions have to be made by the holders of the capital stock), and, except as otherwise set forth in the Disclosure Package and the Final Prospectus, all outstanding shares of capital stock of the subsidiaries are owned by the Issuer either directly or through wholly owned subsidiaries free and clear of any perfected security interest or any other security interests, claims, liens or encumbrances;

(n) There is no franchise, contract or other document of a character required to be described in the Registration Statement or Final Prospectus, or to be filed as an exhibit thereto, which is not described or filed as required (and the Preliminary Prospectus contains in all material respects the same description of the foregoing matters contained in the Final Prospectus); and the statements in the Preliminary Prospectus and the Final Prospectus under the headings “Business—Intellectual Property,” “Business—Patent Assignment Agreement,” “Business—License Agreements,” “Business—Government Regulation” and “Legal Proceedings” from the Issuer’s Annual Report on Form 10-K filed with the SEC on March 8, 2018, “Legal Proceedings” from the Issuer’s Quarterly Reports on Form 10-Q filed with the SEC on May 8, 2018 and August 7, 2018, “Risk Factors—Risks Related to Intellectual Property,” “Risk Factors—Risks Related to Our Business, Technology and Industry,” “Comparison of Swiss Law and Delaware Law,” “Description of Capital Shares” and “Material U.S. Federal Income Tax Consideration for Non-U.S. Holders”, insofar as such statements summarize legal matters, agreements, documents or proceedings discussed therein, are accurate and fair summaries of such legal matters, agreements, documents or proceedings;

(o) This Underwriting Agreement has been duly authorized, executed and delivered by the Issuer;

(p) The Issuer is not and, after giving effect to the offering and sale of the Securities and the application of the proceeds thereof as described in the Disclosure Package and the Final Prospectus, will not be an “investment company” as defined in the Investment Company Act of 1940, as amended;

(q) No consent, approval, authorization, filing with or order of any court or governmental agency or body is required in connection with the transactions contemplated herein, except (i) such as have been obtained under the Securities Act; (ii) such as are required by the listing rules of the Nasdaq Global Market; (iii) such as are required by the applicable rules of the Financial Industry Regulatory Authority; and (iv) such as may be required under the blue sky laws of any jurisdiction in connection with the purchase and distribution of the Securities by the Underwriters in the manner contemplated herein and in the Disclosure Package and the Final Prospectus;

(r) Neither the issue and sale of the Securities nor the consummation of any other of the transactions herein contemplated nor the fulfillment of the terms hereof will conflict with, result in a breach or violation of, or imposition of any lien, charge or encumbrance upon any property or assets of the Issuer or any of its subsidiaries pursuant to, (i) the Articles of Association of the Issuer or any of its subsidiaries, (ii) the terms of any indenture, contract, lease, mortgage, deed of trust, note agreement, loan agreement or other agreement, obligation, condition, covenant or instrument to which the Issuer or any of its subsidiaries is a party or bound or to which its or their property is subject, or (iii) any statute, law, rule, regulation, judgment, order or decree applicable to the Issuer or any of its subsidiaries of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Issuer or any of its subsidiaries or any of its or their properties, except in the cases of clauses (ii) and (iii) for such conflict, breach, violation or imposition as would not reasonably be expected to have a Material Adverse Effect;

(s) No holders of securities of the Issuer have rights to the registration of such securities under the Registration Statement, except to the extent such registration rights have been waived in connection with the offering of the Securities;

(t) The consolidated historical financial statements and schedules of the Issuer and its consolidated subsidiaries included or incorporated by reference in the Preliminary Prospectus, the Final Prospectus and the Registration Statement present fairly the financial condition, results of operations and cash flows of the Issuer as of the dates and for the periods indicated, comply as to form, in all material respects, with the applicable accounting requirements of the Securities Act and have been prepared in conformity with generally accepted accounting principles applied on a consistent basis throughout the periods involved (except as otherwise noted therein).

(u) The interactive data in the eXtensible Business Reporting Language incorporated by reference into the Registration Statement, the Disclosure Package and the Final Prospectus fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto;

(v) No action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Issuer or any of its subsidiaries or its or their property is pending or, to the best knowledge of the Issuer, threatened that (i) would reasonably be expected to have a material adverse effect on the performance of this Underwriting Agreement or the consummation of any of the transactions contemplated hereby or (ii) would reasonably be expected to have a material adverse effect on the condition (financial or otherwise), prospects, earnings, business or properties of the Issuer and its subsidiaries, taken as a whole, whether or not arising from transactions in the ordinary course of business (a "Material Adverse Effect"), except as set forth in or contemplated in the Disclosure Package and the Final Prospectus;

(w) Each of the Issuer and each of its subsidiaries owns or leases all such properties as are necessary to the conduct of its operations as presently conducted, except for intellectual property which is separately addressed in subsection (rr) and except as would not reasonably be expected to have a Material Adverse Effect;

(x) Neither the Issuer nor any subsidiary is in violation or default of (i) any provision of its Articles of Association, (ii) the terms of any indenture, contract, lease, mortgage, deed of trust, note agreement, loan agreement or other agreement, obligation, condition, covenant or instrument to which it is a party or bound or to which its property is subject, or (iii) any statute, law, rule, regulation, judgment, order or decree of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Issuer or such subsidiary or any of its properties, as applicable, except in the case of clauses (ii) and (iii), for such violation or default as would not reasonably be expected to have a Material Adverse Effect;

(y) Ernst & Young LLP, who have certified certain financial statements of the Issuer and its consolidated subsidiaries and delivered their report with respect to the audited consolidated financial statements and schedules included in the Disclosure Package and the Prospectus, are independent public accountants with respect to the Issuer within the meaning of the Securities Act and the applicable published rules and regulations thereunder;

(z) There are no transfer taxes or other similar fees or charges under Federal law or the laws of any state, or any political subdivision thereof, required to be paid in connection with the execution and delivery of this Underwriting Agreement or the issuance by the Issuer or sale by the Issuer of the Securities, except Swiss issuance stamp duty, which is being paid by the Issuer;

(aa) The Issuer has filed all tax returns that are required to be filed or has requested extensions thereof (except in any case in which the failure so to file would not reasonably be expected to have a Material Adverse Effect) and has paid all taxes required to be paid by it and any other assessment, fine or penalty levied against it, to the extent that any of the foregoing is due and payable, except for any such assessment, fine or penalty that is currently being contested in good faith or as would not reasonably be expected to have a Material Adverse Effect;

(bb) No labor problem or dispute with the employees of the Issuer or any of its subsidiaries exists or, to the knowledge of the Issuer, is threatened or imminent, and the Issuer is not aware of any existing or imminent labor disturbance by the employees of any of its or its subsidiaries' principal suppliers, contractors or customers, that would reasonably be expected to have a Material Adverse Effect;

(cc) The Issuer and each of its subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as the Issuer reasonably believes are prudent and customary in the businesses in which they are engaged; all policies of insurance and fidelity or surety bonds insuring the Issuer or any of its subsidiaries or their respective businesses, assets, employees, officers and directors are in full force and effect; the Issuer and its subsidiaries are in compliance with the terms of such policies and instruments in all material respects; and there are no claims by the Issuer or any of its subsidiaries under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; neither the Issuer nor any such subsidiary has been refused any insurance coverage sought or applied for; and neither the Issuer nor any such subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not reasonably be expected to have a Material Adverse Effect;

(dd) No subsidiary of the Issuer is currently prohibited, directly or indirectly, from paying any dividends to the Issuer, from making any other distribution on such subsidiary's capital stock, from repaying to the Issuer any loans or advances to such subsidiary from the Issuer or from transferring any of such subsidiary's property or assets to the Issuer or any other subsidiary of the Issuer, except as described in or contemplated by the Disclosure Package and the Prospectus (exclusive of any supplement thereto);

(ee) The Issuer and its subsidiaries possess all licenses, certificates, permits and other authorizations required to be issued by all applicable authorities necessary to conduct their respective businesses, except where the failure to possess such licenses, certificates, permits and other authorizations would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect, and neither the Issuer nor any such subsidiary has received any notice of proceedings relating to the revocation or modification of any such certificate, authorization or permit which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would reasonably be expected to have a Material Adverse Effect;

(ff) The Issuer and each of its subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken

with respect to any differences. The Issuer and its subsidiaries' internal controls over financial reporting are effective at the reasonable assurance level and the Issuer and its subsidiaries are not aware of any material weakness in their internal controls over financial reporting (it being understood that, as of the date hereof, the Issuer is not required to comply with Section 404(b) of the Sarbanes-Oxley Act (as defined below));

(gg) The Issuer and its subsidiaries maintain "disclosure controls and procedures" (as such term is defined in Rule 13a-15(e) under the Securities and Exchange Act 1934, as amended and the rules and regulations of the SEC promulgated thereunder (the "Exchange Act")); such disclosure controls and procedures are effective at the reasonable assurance level;

(hh) The Issuer has not taken, directly or indirectly, without giving effect to activities by the Underwriters, any action designed to or that would constitute or that would reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Issuer to facilitate the sale or resale of the Securities;

(ii) The Issuer and its subsidiaries are (i) in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants ("Environmental Laws"), (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) have not received notice of any actual or potential liability under any environmental law, except where such non-compliance with Environmental Laws, failure to receive required permits, licenses or other approvals, or liability would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Except as set forth in the Disclosure Package and the Final Prospectus, neither the Issuer nor any of the subsidiaries has been named as a "potentially responsible party" under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended;

(jj) In the ordinary course of its business, the Issuer periodically reviews the effect of Environmental Laws on the business, operations and properties of the Issuer and its subsidiaries, in the course of which it identifies and evaluates associated costs and liabilities (including, without limitation, any capital or operating expenditures required for clean-up, closure of properties or compliance with Environmental Laws, or any permit, license or approval, any related constraints on operating activities and any potential liabilities to third parties). On the basis of such review, the Issuer has reasonably concluded that such associated costs and liabilities would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect;

(kk) None of the following events has occurred or exists: (i) a failure to fulfill the obligations, if any, under the minimum funding standards of Section 302 of the United States Employee Retirement Income Security Act of 1974, as amended ("ERISA"), and the regulations and published interpretations thereunder with respect to a

Plan, determined without regard to any waiver of such obligations or extension of any amortization period; (ii) an audit or investigation by the Internal Revenue Service, the U.S. Department of Labor, the Pension Benefit Guaranty Corporation or any other federal or state governmental agency or any foreign regulatory agency with respect to the employment or compensation of employees by any of the Issuer or any of its subsidiaries that would reasonably be expected to have a Material Adverse Effect; (iii) any breach of any contractual obligation, or any violation of law or applicable qualification standards, with respect to the employment or compensation of employees by the Issuer or any of its subsidiaries that would reasonably be expected to have a Material Adverse Effect. None of the following events has occurred or is reasonably likely to occur: (i) a material increase in the aggregate amount of contributions required to be made to all Plans in the current fiscal year of the Issuer and its subsidiaries compared to the amount of such contributions made in the most recently completed fiscal year of the Issuer and its subsidiaries; (ii) a material increase in the “accumulated post-retirement benefit obligations” (within the meaning of Statement of Financial Accounting Standards 106) of the Issuer and its subsidiaries compared to the amount of such obligations in the most recently completed fiscal year of the Issuer and its subsidiaries; (iii) any event or condition giving rise to a liability under Title IV of ERISA that would reasonably be expected to have a Material Adverse Effect; or (iv) the filing of a claim by one or more employees or former employees of the Issuer or any of its subsidiaries related to their employment that would reasonably be expected to have a Material Adverse Effect. For purposes of this paragraph, the term “Plan” means a plan (within the meaning of Section 3(3) of ERISA) subject to Title IV of ERISA with respect to which the Issuer or any of its subsidiaries may have any liability;

(ll) There is and has been no failure on the part of the Issuer and any of the Issuer’s directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith (the “Sarbanes-Oxley Act”) that are in effect and with which the Issuer is required to comply, including Section 402 relating to loans and Sections 302 and 906 relating to certifications;

(mm) Neither the Issuer nor any of its subsidiaries nor, to the knowledge of the Issuer, any director, officer, agent, employee, affiliate or other person acting on behalf of the Issuer or any of its subsidiaries is aware of or has taken any action, directly or indirectly, that would result in a violation or a sanction for violation by such persons of the Foreign Corrupt Practices Act of 1977 or the U.K. Bribery Act 2010, each as may be amended, or similar law of any other relevant jurisdiction, or the rules or regulations thereunder; and the Issuer and its subsidiaries have instituted and maintain policies and procedures to ensure compliance therewith. No part of the proceeds of the offering will be used, directly or indirectly, in violation of the Foreign Corrupt Practices Act of 1977 or the U.K. Bribery Act 2010, each as may be amended, or similar law of any other relevant jurisdiction, or the rules or regulations thereunder;

(nn) The operations of the Issuer and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements and the money laundering statutes and the rules and regulations

thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “Money Laundering Laws”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Issuer or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the best knowledge of the Issuer, threatened;

(oo) Neither the Issuer nor any of its subsidiaries nor, to the knowledge of the Issuer, any director, officer, agent, employee or affiliate of the Issuer or any of its subsidiaries (i) is, or is controlled or 50% or more owned in the aggregate by or is acting on behalf of, one or more individuals or entities that are currently the subject of any sanctions administered or enforced by the United States (including any administered or enforced by the Office of Foreign Assets Control of the U.S. Department of the Treasury (“OFAC”), the U.S. Department of State or the Bureau of Industry and Security of the U.S. Department of Commerce), the United Nations Security Council, the European Union, a member state of the European Union (including sanctions administered or enforced by Her Majesty’s Treasury of the United Kingdom) or other relevant sanctions authority (collectively, “Sanctions” and such persons, “Sanctioned Persons” and each such person, a “Sanctioned Person”), (ii) is located, organized or resident in a country or territory that is, or whose government is, the subject of Sanctions that broadly prohibit dealings with that country or territory (collectively, “Sanctioned Countries” and each, a “Sanctioned Country”) or (iii) will, directly or indirectly, use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other individual or entity in any manner that would result in a violation of any Sanctions by, or would result in the imposition of Sanctions against, any individual or entity (including any individual or entity participating in the offering, whether as underwriter, advisor, investor or otherwise);

(pp) Neither the Issuer nor any of its subsidiaries has engaged in any dealings or transactions with or for the benefit of a Sanctioned Person, or with or in a Sanctioned Country, in the preceding 3 years, nor does the Issuer or any of its subsidiaries have any plans to engage in dealings or transactions with or for the benefit of a Sanctioned Person, or with or in a Sanctioned Country;

(qq) The subsidiaries listed on Annex A attached hereto are the only significant subsidiaries of the Issuer as defined by Rule 1-02 of Regulation S-X (the “Subsidiaries”);

(rr) The Issuer and its subsidiaries own, possess, license or have other rights to use all patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, technology, know-how and other intellectual property (collectively, the “Intellectual Property”) that are described in the Disclosure Package as being owned by the Company (“Company Intellectual Property”) or, to the Company’s knowledge and except as described in the Disclosure Package, are necessary for the conduct of the Issuer’s business as now conducted or as proposed in the Disclosure Package and Final Prospectus to be conducted. Except as described in the Disclosure Package, all licenses and other agreements pursuant to which the Issuer grants or is granted any license, covenant not to

sue, or other rights, title or interests with respect to the Company Intellectual Property is a valid and binding agreement of the Issuer, is in full force and effect, and is enforceable against the Issuer, and no party is in default under, or in breach or violation of, any such license or agreement. Except as set forth in the Disclosure Package and the Final Prospectus (a) there are no rights of third parties to any Company Intellectual Property; (b) there is no material infringement by third parties of any Company Intellectual Property; (c) the Issuer and its subsidiaries are not obligated to pay a material royalty, grant a license to, or provide other material consideration to any third party in connection with Company Intellectual Property; (d) there is no pending or threatened action, suit, proceeding or claim by others challenging the validity or scope of any Company Intellectual Property, and the Issuer is unaware of any facts which would form a reasonable basis for any such claim; (e) there is no pending or threatened action, suit, proceeding or claim by others that the Issuer infringes or otherwise violates any patent, trademark, copyright, trade secret or other proprietary rights of others, and the Issuer is unaware of any other fact which would form a reasonable basis for any such claim; (f) all registrations and applications of Company Intellectual Property have been procured and maintained in accordance with applicable administrative and legal requirements, including timely payments of maintenance and other required fees; (g) the Issuer is unaware of any U.S. patent or published U.S. patent application with an allowed claim that is owned by a third party and is unlicensed by the Company, and which contains a claim that would be infringed by the manufacture, use or sale of the gene-editing technology known as and described in the Disclosure Package as CRISPR/Cas9; (h) there is no prior art of which the Issuer is aware that may render any U.S. patent held by the Issuer invalid or any U.S. patent application held by the Issuer un-patentable which has not been disclosed to the PTO; and (i) the Issuer and its subsidiaries have taken reasonable measures to protect, maintain and safeguard the Company Intellectual Property, including the execution of appropriate nondisclosure and confidentiality agreements;

(ss) Except as described in the Disclosure Package and the Final Prospectus, and except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect: (i) the Issuer and its subsidiaries are and have been in compliance with statutes, laws, ordinances, rules and regulations applicable to the Issuer and its subsidiaries, as applicable, for the ownership, research, testing, development, manufacture, packaging, processing, use, labeling, promotion, advertising, storage or disposal of any product manufactured by or on behalf of the Issuer or its subsidiaries (an "Issuer Product"), including, without limitation, the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 301, et seq., the Public Health Service Act, 42 U.S.C. § 262, similar laws of any other federal or state governmental agency or any foreign regulatory agency and the regulations promulgated pursuant to such laws (collectively, "Applicable Laws"); (ii) the Issuer and its subsidiaries possess all licenses, certificates, approvals, applications, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws and/or for the ownership of its properties or the conduct of its business as it relates to an Issuer Product and as described in the Disclosure Package and the Final Prospectus (collectively, "Authorizations") and such Authorizations are valid and in full force and effect and the Issuer and its subsidiaries are not in violation of any term of any such Authorizations; (iii) neither the Issuer nor its subsidiaries have received any written

notice of adverse finding, warning letter or other correspondence or notice from the U.S. Food and Drug Administration (“**FDA**”), the U.S. National Institutes of Health (“**NIH**”), or any other federal or state governmental agency or any foreign regulatory agency alleging or asserting noncompliance with any Applicable Laws or Authorizations relating to an Issuer Product; (iv) the Issuer and its subsidiaries have not received written notice of any ongoing claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any federal or state governmental agency or any foreign regulatory agency or third party alleging that any Issuer Product, operation or activity related to an Issuer Product is in violation of any Applicable Laws or Authorizations or has any knowledge that any such federal or state governmental agency or any foreign regulatory agency or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (v) the Issuer and its subsidiaries have not received written notice that any federal or state governmental agency or any foreign regulatory agency has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations or has any knowledge that any such federal or state governmental agency or foreign regulatory agency has threatened or is considering such action with respect to an Issuer Product; (vi) the Issuer and its subsidiaries have filed, obtained, maintained or submitted all reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as are required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete, correct and not misleading on the date filed (or were corrected or supplemented by a subsequent submission); and (vii) to the Issuer’s knowledge, the Issuer, its subsidiaries, any of their respective directors, officers, employees or agents have not made, or caused the making of, any false statements or representations on, or material omissions from, any submission to, or any other records or documentation prepared or maintained to comply with the requirements of, the FDA or any other federal or state governmental agency or foreign regulatory agency;

(tt) No clinical trials have been conducted by or on behalf of the Issuer or its subsidiaries. The preclinical studies and tests conducted by or on behalf of the Issuer or its subsidiaries have been and, if still pending, are being conducted in all material respects pursuant to all Applicable Laws and Authorizations, as well as any conditions of approval and policies imposed by any applicable institutional review board, any other applicable ethics review board or committee, and any institution at which the preclinical studies and tests have been conducted; the descriptions of the results of such preclinical studies and tests contained in the Disclosure Package and the Final Prospectus are accurate and complete in all material respects and fairly present the data derived from preclinical studies and tests; except to the extent disclosed in the Disclosure Package and the Final Prospectus, the Issuer is not aware of any preclinical trials, the results of which the Issuer believes reasonably call into question the research, nonclinical or preclinical study or test results described or referred to in the Disclosure Package and the Final Prospectus when viewed in the context in which such results are described; and the Issuer and its subsidiaries have not received any written notices or correspondence from any federal or state governmental agency, any foreign regulatory agency, any applicable institutional review board, any other applicable ethics review board or committee or any institution at which the preclinical studies and tests have been conducted requiring the

termination, suspension or material modification of any preclinical study or test conducted by, in collaboration with or on behalf of the Issuer or its subsidiaries;

(uu) Except as disclosed in the Disclosure Package and the Final Prospectus, the Issuer (i) does not have any material lending or other relationship with any bank or lending affiliate of the Underwriters and (ii) does not intend to use any of the proceeds from the sale of the Securities hereunder to repay any outstanding debt owed to any affiliate of the Underwriters;

(vv) Neither the Issuer nor any of its subsidiaries nor any of its or their properties or assets has any immunity from the jurisdiction of any court or from any legal process (whether through service or notice, attachment prior to judgment, attachment in aid of execution or otherwise) under the laws of Switzerland; and

(ww) Any certificate signed by any officer of the Issuer and delivered to the Representatives or counsel for the Underwriters in connection with the offering of the Securities shall be deemed a representation and warranty by the Issuer, as to matters covered thereby, to each Underwriter.

(ii) The Selling Shareholder represents and warrants to, and agrees with, each Underwriter that:

(a) The Selling Shareholder is the record and beneficial owner of the Selling Shareholder Option Securities to be sold by it hereunder free and clear of all liens, encumbrances, equities and claims and has duly endorsed such Selling Shareholder Option Securities in blank, and has full power and authority to sell its interest in the Selling Shareholder Option Securities, and, assuming that each Underwriter acquires its interest in the Selling Shareholder Option Securities it has purchased from the Selling Shareholder without notice of any adverse claim (within the meaning of Section 8-105 of the New York Uniform Commercial Code (“UCC”)), each Underwriter that has purchased such Selling Shareholder Option Securities delivered on the Closing Date to The Depository Trust Company or other securities intermediary by making payment therefor as provided herein, and that has had such Selling Shareholder Option Securities credited to the securities account or accounts of such Underwriters maintained with The Depository Trust Company or such other securities intermediary will have acquired a security entitlement (within the meaning of Section 8-102(a)(17) of the UCC) to such Selling Shareholder Option Securities purchased by such Underwriter, and no action based on an adverse claim (within the meaning of Section 8-105 of the UCC) may be asserted against such Underwriter with respect to such Selling Shareholder Option Securities.

(b) The Selling Shareholder has not taken, directly or indirectly, any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Issuer to facilitate the sale or resale of the Selling Shareholder Option Securities.

(c) Book entry shares for the Selling Shareholder Option Securities have been placed in custody, for delivery pursuant to the terms of this Agreement, under a Custody Agreement and Power of Attorney duly authorized (if applicable) executed and delivered by the Selling Shareholder, in the form heretofore furnished to you (the "Custody Agreement") with American Stock Transfer & Trust Company, as Custodian (the "Custodian"); the Selling Shareholder Option Securities represented by the book entry shares so held in custody for the Selling Shareholder are subject to the interests hereunder of the Underwriters; the arrangements for custody and delivery of such shares, made by the Selling Shareholder hereunder and under the Custody Agreement, are not subject to termination by any acts of the Selling Shareholder, or by operation of law, whether by the death or incapacity of the Selling Shareholder or the occurrence of any other event; and if any such death, incapacity or any other such event shall occur before the delivery of such Selling Shareholder Option Securities hereunder, certificates for the Selling Shareholder Option Securities will be delivered by the Custodian in accordance with the terms and conditions of this Agreement and the Custody Agreement as if such death, incapacity or other event had not occurred, regardless of whether or not the Custodian shall have received notice of such death, incapacity or other event.

(d) No consent, approval, authorization or order of any court or governmental agency or body is required for the consummation by the Selling Shareholder of the transactions contemplated herein, except such as may have been obtained under the Securities Act and such as may be required under the blue sky laws of any jurisdiction in connection with the purchase and distribution of the Selling Shareholder Option Securities by the Underwriters and such other approvals as have been obtained.

(e) Neither the sale of the Selling Shareholder Option Securities being sold by the Selling Shareholder nor the consummation of any other of the transactions herein contemplated by the Selling Shareholder or the fulfillment of the terms hereof by the Selling Shareholder will conflict with, result in a breach or violation of, or constitute a default under any law or the terms of any indenture or other agreement or instrument to which the Selling Shareholder is a party or bound, or any judgment, order or decree applicable to the Selling Shareholder of any court, regulatory body, administrative agency, governmental body or arbitrator having jurisdiction over the Selling Shareholder.

(f) The Selling Shareholder has no reason to believe that the representations and warranties of the Issuer contained in this Section 1 are not true and correct, is familiar with the Disclosure Package and the Registration Statement and has no knowledge of any material fact, condition or information not disclosed in the Disclosure Package and the Final Prospectus which has adversely affected or may adversely affect the business of the Issuer or any of its subsidiaries; and the sale of Selling Shareholder Option Securities by the Selling Shareholder pursuant hereto is not prompted by any information concerning the Issuer or any of its subsidiaries which is not set forth in the Disclosure Package and the Final Prospectus or any amendment or supplement thereto.

(g) In respect of any statements in or omissions from the Registration Statement, the Final Prospectus, any Preliminary Prospectus or any Free Writing Prospectus or any amendment or supplement thereto used by the Issuer or any

Underwriter, as the case may be, made in reliance upon and in conformity with information furnished in writing to the Issuer or to the Underwriters by the Selling Shareholder specifically for use in connection with the preparation thereof, the Selling Shareholder hereby makes the same representations and warranties to each Underwriter as the Issuer makes to such Underwriter under paragraphs (i)(b), (i)(g) or (i)(k) of this Section.

(h) The Selling Shareholder is not (1) an employee benefit plan subject to Title I of ERISA, (2) a plan or account subject to Section 4975 of the Internal Revenue Code of 1986, as amended or (3) an entity deemed to hold "plan assets" of any such plan or account under Section 3(42) of ERISA, 29 C.F.R. 2510.3-101, or otherwise.

Any certificate signed by the Selling Shareholder and delivered to the Representatives or counsel for the Underwriters in connection with the offering of the Selling Shareholder Option Securities shall be deemed a representation and warranty by the Selling Shareholder, as to matters covered thereby, to each Underwriter.

## 2. Purchase, Sale and Delivery of the Securities.

(a) Subject to the terms and conditions and in reliance upon the representations and warranties herein set forth, the Issuer agrees to sell to each Underwriter, and each Underwriter agrees, severally and not jointly, to purchase from the Issuer, at a purchase price of \$44.65 per share, the amount of the Underwritten Securities set forth opposite such Underwriter's name in Schedule II hereto; provided, that the aggregate amount to be paid to the Issuer at each of the First Closing Date and any Option Closing Date by Goldman Sachs & Co. LLC shall be reduced by the U.S. dollar amount paid by Goldman Sachs & Co. LLC to purchase the pre-funded Underwritten Capital Increase Amount and Option Capital Increase Amount, respectively.

(b) Delivery of the Underwritten Securities to be purchased by the Underwriters and payment therefor shall be made at the offices of Ropes & Gray LLP, Prudential Tower, 800 Boylston Street, Boston, Massachusetts 02199 (or such other place as may be agreed to by the Issuer and the Representatives) at 10:00 AM, New York City Time, on September 25, 2018, or at such time on such later date not more than two Business Days after the foregoing date as the Representatives shall designate, which date and time may be postponed by agreement between the Representatives and the Issuer or as provided in Section 9 hereof (the time and date of such closing are called the "First Closing Date"). For purposes herein, "Business Day" shall mean any day other than a Saturday, a Sunday or a legal holiday or a day on which banking institutions or trust companies are authorized or obligated by law to close in New York, New York or in Zug, Switzerland.

(c) In addition, subject to the terms and conditions and in reliance upon the representations and warranties herein set forth, the Issuer and the Selling Shareholder hereby grant an option to the several Underwriters to purchase, severally and not jointly, up to 631,578 Option Securities, comprising up to 531,578 Issuer Option Securities to be sold by and purchased from the Issuer and up to 100,000 Selling Shareholder Option

Securities to be sold by and purchased from the Selling Shareholder, at the same purchase price per share to be paid by the Underwriters for the Underwritten Securities, less an amount per share equal to any dividends or distributions declared by the Issuer and payable on the Underwritten Securities and the Selling Shareholder Option Securities but not payable on the Issuer Option Securities. Said option may be exercised in whole or in part at any time on or before the 30th day after the date of the Final Prospectus upon written notice by the Representatives to the Issuer and the Selling Shareholder (the date of any such exercise, an "Option Exercise Date"). Such notice shall set forth (i) the aggregate number of Option Securities as to which the Underwriters are exercising the option and (ii) the time, date and place at which the Option Securities will be delivered (which time and date may be simultaneous with, but not earlier than, the First Closing Date, provided that, if such time and date are simultaneous with the First Closing Date, the option has been exercised before 5:00 a.m. (New York City time) on the second Business Day immediately preceding the First Closing Date; and in the event that such time and date are simultaneous with the First Closing Date, the term "First Closing Date" shall refer to the time and date of delivery of the Underwritten Securities and such Option Securities). Any such time and date of delivery, if subsequent to the First Closing Date, is called an "Option Closing Date," shall be determined by the Representatives and shall not be earlier than two or later than three Business Days after the exercise of said option. The number of Option Securities to be purchased by each Underwriter shall be the same percentage of the total number of shares of the Option Securities to be purchased by the several Underwriters as such Underwriter is purchasing of the Underwritten Securities, subject to such adjustments as you in your absolute discretion shall make to eliminate any fractional shares. In the event that the Underwriters exercise less than their full option to purchase Option Securities, the actual number of Issuer Option Securities to be sold by the Issuer and the actual number of Selling Shareholder Option Securities to be sold by the Selling Shareholder shall be, as nearly as practicable, in the same proportion as the maximum number of Issuer Option Securities set out on Schedule I and the maximum number of Selling Shareholder Option Securities set out on Schedule III.

(d) It is understood that the several Underwriters propose to offer the Securities for sale to the public as set forth in the Final Prospectus.

(e) Payment for the Securities shall be made at the First Closing Date (and, if applicable, at the Option Closing Date) by wire transfer payable in same-day funds to the accounts specified by the Issuer and the Selling Shareholder, as applicable.

(f) The Issuer shall deliver, or cause to be delivered to the Representatives for the accounts of the several Underwriters the Underwritten Securities at the First Closing Date, against release of a wire transfer of same-day funds for the amount of the purchase price therefor. The Issuer and Selling Shareholder, as applicable, shall also deliver, or cause to be delivered to the Representatives for the accounts of the several Underwriters the Option Securities the Underwriters have agreed to purchase at the First Closing Date or the applicable Option Closing Date, as the case may be, against the release of a wire transfer of same-day funds for the amount of the purchase price therefor. Delivery of the Underwritten Securities and the Option Securities shall be made through the facilities of The Depository Trust Company ("DTC") unless the Representatives shall otherwise

instruct. In addition, delivery of the Selling Shareholder Option Securities, if any, shall be evidenced by a copy of the share register (*Aktienbuch*) of the Issuer evidencing Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, as shareholder with respect to the Selling Shareholder Option Securities. If settlement for the Option Securities occurs after the First Closing Date, the obligation of the Underwriters to purchase the Option Securities shall be conditioned upon receipt of supplemental opinions, certificates and letters confirming as of such date the opinions, certificates and letters delivered on the First Closing Date pursuant to Section 6 hereof.

### 3. Capital Increase and Initial Subscription.

(a) Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, agrees, on the basis of the representations, warranties and agreements herein contained, to:

(i) subscribe, by no later than 5:00 a.m. New York City time on the day the Board shall pass a capital increase resolution (*Erhöhungsbefehl*) (the "Underwritten Capital Increase Date," which is the second Business Day immediately preceding the First Closing Date), or such other time and date as agreed between the Issuer and the Representatives, for all of the (A) Underwritten Securities and (B) Issuer Option Securities for which the Underwriters have exercised their option to purchase pursuant to Section 2(c) in a manner such that the delivery of such Issuer Option Securities shall be made at the First Closing Date (the "First Applicable Issuer Option Securities") at the issue price (*Ausgabebetrag*) of CHF 0.03 per Security corresponding to the nominal value of each Security and to deliver the corresponding subscription form (*Zeichnungsschein*) to VISCHER AG, Aeschenvorstadt 4, 4010 Basel, Switzerland, in the form of Exhibit A1 in original form (wet ink signed) by no later than 5:00 a.m. New York City time on the Underwritten Capital Increase Date; and

(ii) deposit or cause to be deposited, not later than 4:00 a.m. New York City time on the Underwritten Capital Increase Date, or such other time and date as agreed between the Issuer and the Representatives, same-day funds in Swiss francs free of bank charges for value in an amount corresponding to the aggregate nominal value of the Underwritten Securities and First Applicable Issuer Option Securities (the "Underwritten Capital Increase Amount") with UBS AG, Basel, Switzerland (the "Capital Increase Bank"), in a blocked account for such capital increase (*Kapitaleinzahlungskonto*), IBAN: CH9700233233236625D7F, made out to the Issuer's name (the "Underwritten Capital Increase Account"), and to cause the Capital Increase Bank to issue and deliver a written confirmation of payment in original form of the Underwritten Capital Increase Amount to VISCHER AG, Aeschenvorstadt 4, 4010 Basel, Switzerland no later than 5:00 a.m.

New York City time on the Underwritten Capital Increase Date (or such other time and date as agreed between the Issuer and the Representatives).

(b) Upon completion of the items referred to in Section 3(a) and, with respect to the actions pursuant to Section 3(b)(i)-(iii), in no event later than 1:00 p.m. New York City time on the Underwritten Capital Increase Date and, with respect to the action pursuant to Section 3(b)(iv), in no event later than 4:00 a.m. New York City time on the Business Day following the Underwritten Capital Increase Date, or such other time and date as agreed between the Issuer and the Representatives, the Board (or a committee or a Board member duly authorized by the Board) will:

(i) pass a capital increase resolution (*Erhöhungsbeschluss*) regarding the issuance of the Underwritten Securities and the First Applicable Issuer Option Securities subscribed for pursuant to Section 3(a)(i) (the “Underwritten Capital Increase”);

(ii) adopt a report on the Underwritten Capital Increase (*Kapitalerhöhungsbericht*) and take note of the auditors’ report (*Prüfungsbestätigung*), all in accordance with Swiss statutory law;

(iii) resolve on the Underwritten Capital Increase and make all amendments to the articles of association of the Issuer necessary in connection with the Underwritten Capital Increase (*Feststellungs- und Statutenänderungsbeschluss*); and

(iv) file the documents necessary for the registration of the Underwritten Capital Increase with the Commercial Register of the Canton of Zug;

*provided, however*, that if this Underwriting Agreement is terminated pursuant to Section 10 prior to the Issuer filing the relevant resolutions with the Commercial Register of the Canton of Zug, (a) the Issuer undertakes not to resolve on the Underwritten Capital Increase (if it has not already done so) or to file the relevant resolutions with the Commercial Register of the Canton of Zug, and (b) the Issuer shall immediately cause the Capital Increase Bank to release the Underwritten Capital Increase Amount in full to Goldman Sachs & Co. LLC, acting for the accounts of the several Underwriters, as soon as practicable; and Goldman Sachs & Co. LLC understands that the Capital Increase Bank may require confirmation, including from Goldman Sachs & Co. LLC, to release the Underwritten Capital Increase Amount and Goldman Sachs & Co. LLC agrees to deliver such confirmation.

(c) Immediately after the registration of the Underwritten Capital Increase in the Commercial Register of the Canton of Zug pursuant to Section 3(b), but in no event later than 9:30 a.m. New York City time on the Business Day following the Underwritten Capital Increase Date, the Issuer will:

(i) deliver to each of the Representatives, the Capital Increase Bank and the share registrar of the Issuer, (a) a copy of the certified excerpt of the journal entry (*Tagebuch*) or a copy of the certified excerpt

from the Commercial Register of the Canton of Zug evidencing the Underwritten Capital Increase, (b) a copy of the certified updated articles of association of the Issuer evidencing the Underwritten Capital Increase, (c) a copy of the Issuer's book of uncertificated securities (*Wertrechtbuch*) evidencing Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, as first holder of the Underwritten Securities, and (d) a copy of the share register (*Aktienbuch*) of the Issuer evidencing Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, as shareholder with respect to the Underwritten Securities and the First Applicable Issuer Option Securities; and

(ii) take all steps necessary to ensure that the Underwritten Securities and the First Applicable Issuer Option Securities will be (a) duly recorded in an account of the Underwriters at DTC on the First Closing Date; and (b) freely transferable (subject to any applicable restrictions set forth in the articles of association of the Issuer) on the First Closing Date.

(d) The funds deposited in the Underwritten Capital Increase Account shall, upon registration of the Underwritten Capital Increase pursuant to Section 3(b) and upon request by the Representatives, be transferred to a separate account of the Issuer with UBS AG and shall, in such case, remain so deposited for the account of the Issuer until the earlier of:

(i) the issuance of the Underwritten Securities and the First Applicable Issuer Option Securities to Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, as set forth in Section 3(c) on the First Closing Date; and

(ii) the date of receipt by the Representatives on behalf of the several Underwriters of the proceeds of (A) the sale of the Underwritten Securities and the First Applicable Issuer Option Securities as set forth in Sections 11(b), 11(c) or 11(e) or (B) the Capital Reduction as set forth in Section 11(d), as the case may be.

Any fees payable to the Capital Increase Bank for any transfer of the funds deposited in the Underwritten Capital Increase Account pursuant to this Section 3(d) shall be payable directly to the Capital Increase Bank by the Issuer.

#### 4. Subscription and Issuance of Issuer Option Securities.

(a) If the Underwriters exercise the option granted to them under Section 2(c) in a manner such that the delivery of the Issuer Option Securities shall be made on the Option Closing Date, Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, agrees, on the basis of the representations,

warranties and agreements herein contained, and subject to the conditions stated below and to this Underwriting Agreement having not been terminated, to:

(i) Subscribe, by no later than 5:00 a.m. New York City time on the day the Board shall pass a capital increase resolution (*Erhöhungsbeschluss*) (the "Option Capital Increase Date," which is the second Business Day immediately preceding the Option Closing Date), or such other time and date as agreed between the Issuer and the Representatives, for the number of Issuer Option Securities for which the option to purchase has been exercised pursuant to Section 2(c) (the "Second Applicable Issuer Option Securities") at the issue price (*Ausgabebetrag*) of CHF 0.03 per Second Applicable Option Security corresponding to the nominal value of each Second Applicable Option Security and to deliver the corresponding subscription form (*Zeichnungsschein*) to VISCHER AG, Aeschenvorstadt 4, 4010 Basel, Switzerland, in the form of Exhibit A2 in original form (wet ink signed) by no later than 5:00 a.m. New York City time on the Option Capital Increase Date; and

(ii) deposit or cause to be deposited, not later than 4:00 a.m. New York City time on the Option Capital Increase Date, or such other time and date as agreed between the Issuer and the Representatives, same-day funds in Swiss francs free of bank charges for value in an amount corresponding to the aggregate nominal value of the Second Applicable Issuer Option Securities (the "Option Capital Increase Amount") with the Capital Increase Bank, in a blocked account for such capital increase (*Kapitaleinzahlungskonto*), IBAN: CH6600233233236629D7J, made out to the Issuer's name (the "Option Capital Increase Account"), and to cause the Capital Increase Bank to issue and deliver a written confirmation of payment in original form of the Option Capital Increase Amount to VISCHER AG, Aeschenvorstadt 4, 4010 Basel, Switzerland no later than 5:00 a.m. New York City time on the Option Capital Increase Date (or such other time and date as agreed between the Issuer and the Representatives).

(b) Upon completion of the items referred to in Section 4(a) and, with respect to the actions pursuant to Section 4(b)(i)-(iii), in no event later than 1:00 p.m. New York City time on the Option Capital Increase Date and, with respect to the action pursuant to Section 4(b)(iv), in no event later than 4:00 a.m. New York City time on the Business Day following the Option Capital Increase Date, or such other time and date as agreed between the Issuer and the Representatives, the Board (or a committee or a Board member duly authorized by the Board) will:

(i) pass a capital increase resolution (*Erhöhungsbeschluss*) regarding the issuance of the Second Applicable Issuer Option Securities subscribed for pursuant to Section 4(a)(i) (the "Option Capital Increase");

(ii) adopt a report on the Option Capital Increase (*Kapitalerhöhungsbericht*) and take note of the auditors' report (*Prüfungsbestätigung*), all in accordance with Swiss statutory law;

(iii) resolve on the Option Capital Increase and make all amendments to the articles of association of the Issuer necessary in connection with the Option Capital Increase (*Feststellungs- und Statutenänderungsbeschluss*); and

(iv) file the documents necessary for the registration of the Option Capital Increase with the Commercial Register of the Canton of Zug;

*provided, however*, that if this Underwriting Agreement is terminated pursuant to Section 10 prior to the Issuer filing the relevant resolutions with the Commercial Register of the Canton of Zug, (a) the Issuer undertakes not to resolve on the Option Capital Increase (if it has not already done so) or to file the relevant resolutions with the Commercial Register of the Canton of Zug, and (b) the Issuer shall immediately cause the Capital Increase Bank to release the Option Capital Increase Amount in full to Goldman Sachs & Co. LLC, acting for the accounts of the several Underwriters, as soon as practicable; and Goldman Sachs & Co. LLC understands that the Capital Increase Bank may require confirmation, including from Goldman Sachs & Co. LLC, to release the Underwritten Capital Increase Amount and Goldman Sachs & Co. LLC agrees to deliver such confirmation.

(c) Immediately after the registration of the Option Capital Increase in the Commercial Register of the Canton of Zug pursuant to Section 4(b), but in no event later than 9:30 a.m. New York City time on the Business Day following the Option Capital Increase, the Issuer will:

(i) deliver to each of the Representatives, the Capital Increase Bank and the share registrar of the Issuer, (a) a copy of the certified excerpt of the journal entry (*Tagebuch*) or a copy of the certified excerpt from the Commercial Register of the Canton of Zug evidencing the Option Capital Increase, (b) a copy of the certified updated articles of association of the Issuer evidencing the Option Capital Increase, (c) a copy of the Issuer's book of uncertificated securities (*Wertrechtbuch*) evidencing Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, as first holder of the Second Applicable Issuer Option Securities, and (d) a copy of the share register (*Aktienbuch*) of the Issuer evidencing Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, as shareholder with respect to the Second Applicable Issuer Option Securities; and

(ii) take all steps necessary to ensure that the Second Applicable Issuer Option Securities will be (a) duly recorded in an account of the Underwriters at DTC on the Option Closing Date, and (b) freely

transferable (subject to any applicable restrictions set forth in the articles of association of the Issuer) on the Option Closing Date.

(d) The funds deposited in the Option Capital Increase Account shall, upon registration of the Option Capital Increase pursuant to Section 4(b) and upon request by the Representatives, be transferred to a separate account of the Issuer with UBS AG and shall, in such case, remain so deposited, without interest, for the account of the Issuer until the earlier of:

(i) the issuance of the Second Applicable Issuer Option Securities to Goldman Sachs & Co. LLC, acting in its own name but for the accounts of the several Underwriters, as set forth in Section 4(c) on the Option Closing Date; and

(ii) the date of receipt by the Representatives on behalf of the several Underwriters of the proceeds of (A) the sale of the Second Applicable Issuer Option Securities as set forth in Sections 11(b), 11(c) or 11(e) or (B) the Capital Reduction as set forth in Section 11(d), as the case may be.

Any fees payable to the Capital Increase Bank for any transfer of the funds deposited in the Option Capital Increase Account pursuant to this Section 4(d) shall be payable directly to the Capital Increase Bank by the Issuer.

#### 5. Agreements.

(i) The Issuer agrees with the several Underwriters that:

(a) Prior to the termination of the offering of the Securities, the Issuer will not file any amendment of the Registration Statement or supplement (including the Final Prospectus or any Preliminary Prospectus) to the Base Prospectus unless the Issuer has furnished you a copy for your review prior to filing and will not file any such proposed amendment or supplement to which you reasonably object. The Issuer will cause the Final Prospectus, properly completed, and any supplement thereto to be filed in a form approved by the Representatives with the SEC pursuant to the applicable paragraph of Rule 424(b) under the Securities Act within the time period prescribed and will provide evidence satisfactory to the Representatives of such timely filing. The Issuer will promptly advise the Representatives (i) when the Final Prospectus, and any supplement thereto, shall have been filed (if required) with the SEC pursuant to Rule 424(b), (ii) when, prior to termination of the offering of the Securities, any amendment to the Registration Statement shall have been filed or become effective, (iii) of any request by the SEC or its staff for any amendment of the Registration Statement, or for any supplement to the Final Prospectus or for any additional information, (iv) of the issuance by the SEC of any stop order suspending the effectiveness of the Registration Statement or of any notice objecting to its use or the institution or threatening of any proceeding for that purpose and (v) of the receipt by the Issuer of any notification with respect to the suspension of the qualification of the Securities for sale in any jurisdiction or the

institution or threatening of any proceeding for such purpose. The Issuer will use its reasonable best efforts to prevent the issuance of any such stop order or the occurrence of any such suspension or objection to the use of the Registration Statement and, upon such issuance, occurrence or notice of objection, to obtain as soon as possible the withdrawal of such stop order or relief from such occurrence or objection, including, if necessary, by filing an amendment to the Registration Statement or a new registration statement and using its reasonable best efforts to have such amendment or new registration statement declared effective as soon as practicable;

(b) If, at any time prior to the filing of the Final Prospectus pursuant to Rule 424(b) under the Securities Act, any event occurs as a result of which the Disclosure Package would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein in the light of the circumstances under which they were made at such time not misleading, the Issuer will (i) notify promptly the Representatives so that any use of the Disclosure Package may cease until it is amended or supplemented; (ii) amend or supplement the Disclosure Package to correct such statement or omission; and (iii) supply any amendment or supplement to you in such quantities as you may reasonably request;

(c) If, at any time when a prospectus relating to the Securities is required to be delivered under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172), any event occurs as a result of which the Final Prospectus as then supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein in the light of the circumstances under which they were made or the circumstances then prevailing not misleading, or if it shall be necessary to amend the Registration Statement, or supplement the Final Prospectus to comply with the Securities Act or the Exchange Act or the respective rules thereunder, including in connection with the use or deliver of the Final Prospectus, the Issuer promptly will (i) notify the Representatives of any such event; (ii) prepare and file with the SEC, subject to the second sentence of paragraph (a) of this Section 5, an amendment or supplement or new registration statement which will correct such statement or omission or effect such compliance; (iii) use its best efforts to have any amendment to the Registration Statement declared effective as soon as practicable in order to avoid any disruption in use of the Final Prospectus and (iv) supply any supplemented Final Prospectus to you in such quantities as you may reasonably request;

(d) As soon as practicable, the Issuer will make generally available to its security holders and to the Representatives an earnings statement or statements of the Issuer and its subsidiaries which will satisfy the provisions of Section 11(a) of and Rule 158 under the Securities Act;

(e) The Issuer will furnish to the Representatives and counsel for the Underwriters, without charge, copies of the Registration Statement with conformed signatures (including exhibits thereto) and to each other Underwriter a conformed copy of the Registration Statement (without exhibits thereto) and, so long as delivery of a prospectus by an Underwriter or dealer may be required by the Securities Act (including

in circumstances where such requirement may be satisfied pursuant to Rule 172), as many copies of each Preliminary Prospectus, the Final Prospectus and each Issuer Free Writing Prospectus and any supplement thereto as the Representatives may reasonably request. The Issuer will pay the expenses of printing or other production of all documents relating to the offering;

(f) The Issuer will use its reasonable best efforts to arrange, if necessary, for the qualification of the Securities for sale under the laws of such jurisdictions as the Representatives may reasonably designate and will use its reasonable best efforts to maintain such qualifications in effect so long as required for the distribution of the Securities; provided that in no event shall the Issuer be obligated to qualify to do business in any jurisdiction where it is not now so qualified or to take any action that would subject it to service of process in suits, other than those arising out of the offering or sale of the Securities, in any jurisdiction where it is not now so subject;

(g) The Issuer will not, without the prior written consent of each of the Representatives, offer, sell, contract to sell, pledge, or otherwise dispose of, (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the Issuer or any affiliate of the Issuer or any person in privity with the Issuer or any affiliate of the Issuer) directly or indirectly, including the filing (or participation in the filing) of a registration statement with the SEC in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Exchange Act, any other Common Shares or any securities convertible into, or exercisable, or exchangeable for, Common Shares; or publicly announce an intention to effect any such transaction, for a period of 90 days after the date of the Underwriting Agreement, provided, however, that the Issuer may (i) issue and sell Common Shares pursuant to any employee stock option or incentive plan, stock ownership or purchase plan or dividend reinvestment plan of the Issuer in effect at the Execution Time, (ii) issue, or agree to issue, any Common Shares or any security convertible into or exercisable for Common Shares in connection with any joint ventures, marketing or distribution arrangements, collaboration agreements or intellectual property license agreements (including, without limitation, pursuant to the terms of that certain Research and Collaboration Agreement, dated September 17, 2018, by and between the Issuer and ViaCyte, Inc.), (iii) issue, or agree to issue, any Common Shares or any security convertible into or exercisable for Common Shares in connection with the acquisition by the Issuer or its subsidiaries of not less than a majority or controlling portion of the securities, business, property or other assets of another person or entity or pursuant to an employee benefit plan assumed by the Issuer in connection with such acquisition, and (iv) issue and sell any Common Shares pursuant to the subscription rights offering described in the Disclosure Package (the "Rights Offering"); provided further that in the case of clauses (ii) and (iii) the aggregate number of Common Shares that the Issuer may sell or issue shall not exceed 5% of the Common Shares issued and outstanding immediately following the transactions contemplated by this Agreement;

(h) The Issuer will not take, directly or indirectly, any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the

Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Issuer to facilitate the sale or resale of the Securities;

(i) The Issuer agrees to pay the costs and expenses relating to the following matters: (i) the preparation, printing or reproduction and filing with the SEC of the Registration Statement (including financial statements and exhibits thereto), each Preliminary Prospectus, the Final Prospectus and each Issuer Free Writing Prospectus, and each amendment or supplement to any of them; (ii) the printing (or reproduction) and delivery (including postage, air freight charges and charges for counting and packaging) of such copies of the Registration Statement, each Preliminary Prospectus, the Final Prospectus and each Issuer Free Writing Prospectus, and all amendments or supplements to any of them, as may, in each case, be reasonably requested for use in connection with the offering and sale of the Securities; (iii) the preparation, printing, authentication, issuance and delivery of certificates for the Securities, including any stamp or transfer taxes in connection with the original issuance and sale of the Securities; (iv) the printing (or reproduction) and delivery of this Underwriting Agreement, any blue sky memorandum and all other agreements or documents printed (or reproduced) and delivered in connection with the offering of the Securities; (v) the registration of the Securities under the Exchange Act and the listing of the Securities on The Nasdaq Global Market; (vi) any registration or qualification of the Securities for offer and sale under the securities or blue sky laws of the several states (including filing fees and the reasonable fees and expenses of counsel for the Underwriters relating to such registration and qualification); (vii) any filings required to be made with the Financial Industry Regulatory Authority, Inc. ("FINRA") (including filing fees and the reasonable fees and expenses of counsel for the Underwriters relating to such filings, with such fees and expenses of counsel contained in clauses (vi) and (vii) not to exceed \$25,000 in the aggregate); (viii) the transportation and other expenses incurred by or on behalf of Issuer representatives in connection with presentations to prospective purchasers of the Securities, provided, however, that the Issuer shall only be responsible for one half of the cost and expenses of any aircraft chartered in connection with the "road show" for the Securities and the Underwriters shall be responsible for the remaining one half; (ix) the fees and expenses of the Issuer's accountants and the fees and expenses of counsel (including local and special counsel) for the Issuer; and (x) all other costs and expenses incident to the performance by the Issuer of its obligations hereunder;

(j) The Issuer agrees that, unless it has or shall have obtained the prior written consent of the Representatives, and each Underwriter, severally and not jointly, agrees with the Issuer that, unless it has or shall have obtained, as the case may be, the prior written consent of the Issuer, it has not made and will not make any offer relating to the Securities that would constitute an Issuer Free Writing Prospectus or that would otherwise constitute a Free Writing Prospectus required to be filed by the Issuer with the SEC or retained by the Issuer under Rule 433 under the Securities Act; provided that the prior written consent of the parties hereto shall be deemed to have been given in respect of the Free Writing Prospectuses included in Schedule IV hereto and any electronic road show. Any such free writing prospectus consented to by the Representatives or the Issuer is hereinafter referred to as a "Permitted Free Writing Prospectus." The Issuer agrees that (x) it has treated and will treat, as the case may be, each Permitted Free Writing

Prospectus as an Issuer Free Writing Prospectus and (y) it has complied and will comply, as the case may be, with the requirements of Rules 164 and 433 applicable to any Permitted Free Writing Prospectus, including in respect of timely filing with the SEC, legending and record keeping; and

(k) The Issuer will notify promptly the Representatives if the Issuer ceases to be an Emerging Growth Company at any time prior to the later of (a) completion of the distribution of the Securities within the meaning of the Securities Act and (b) completion of the 90-day restricted period referred to in Section 5(i)(g) hereof.

(ii) The Selling Shareholder agrees with the several Underwriters that:

(a) The Selling Shareholder will not take, directly or indirectly, any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Issuer to facilitate the sale or resale of the Selling Shareholder Option Securities;

(b) The Selling Shareholder will advise you promptly, and if requested by you, will confirm such advice in writing, so long as delivery of a prospectus relating to the Selling Shareholder Option Securities by an underwriter or dealer may be required under the Securities Act, of (i) any material change in the Issuer's condition (financial or otherwise), prospects, earnings, business or properties, (ii) any change in information in the Registration Statement, the Final Prospectus, any Preliminary Prospectus or any Issuer Free Writing Prospectus or any amendment or supplement thereto relating to the Selling Shareholder or (iii) any new material information relating to the Issuer or relating to any matter stated in the Final Prospectus or any Free Writing Prospectus which comes to the attention of the Selling Shareholder;

(c) The Selling Shareholder will deliver to the Underwriters prior to or at the First Closing Date a properly completed and executed United States Treasury Department Form W-9 (or any other applicable form or statement specified by the Treasury Department regulations in lieu thereof);

(d) The Selling Shareholder will not, directly or indirectly, use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person in any manner that will result in a violation of Sanctions by, or could result in the imposition of Sanctions against, any person (including any person participating in the offering, whether as underwriter, advisor, investor or otherwise); and

(e) The Selling Shareholder represents that it has not prepared or had prepared on its behalf or used or referred to, and agrees that it will not prepare or have prepared on its behalf or use or refer to, any Free Writing Prospectus, and has not distributed and will not distribute any written materials in connection with the offer or sale of the Securities.

6. Conditions to the Obligations of the Underwriters. The obligations of the Underwriters to purchase the Underwritten Securities and the Option Securities, as the case may

be, shall be subject to the accuracy of the representations and warranties on the part of the Issuer contained herein as of the Execution Time and the First Closing Date, and the Issuer and the Selling Shareholder, in the case of any Option Closing Date pursuant to Section 2 hereof, to the accuracy of the statements of the Issuer and the Selling Shareholder made in any certificates pursuant to the provisions hereof, to the performance by the Issuer and the Selling Shareholder of its obligations hereunder and to the following additional conditions:

(a) The Final Prospectus, and any supplement thereto, have been filed in the manner and within the time period required by Rule 424(b) under the Securities Act; any material required to be filed by the Issuer pursuant to Rule 433(d) under the Securities Act shall have been filed with the SEC within the applicable time periods prescribed for such filings by Rule 433; and no stop order suspending the effectiveness of the Registration Statement or any notice objecting to its use shall have been issued and no proceedings for that purpose shall have been instituted or threatened;

(b) The Issuer shall have requested and caused Goodwin Procter LLP, U.S. counsel for the Issuer, to have furnished to the Representatives their opinion and negative assurance letter, each dated the First Closing Date and addressed to the Representatives, and each in form and substance reasonably satisfactory to the Representatives;

(c) The Selling Shareholder shall have requested and caused Goodwin Procter LLP, counsel for the Selling Shareholder, to have furnished to the Representatives their opinion dated the Option Closing Date and addressed to the Representatives, and in form and substance reasonably satisfactory to the Representatives;

(d) The Issuer shall have requested and caused Vischer AG, Swiss counsel for the Issuer, to have furnished to the Representatives their opinion, dated the First Closing Date and addressed to the Representatives, in form and substance reasonably satisfactory to the Representatives;

(e) The Representatives shall have received from Ropes & Gray LLP, U.S. counsel for the Underwriters, their negative assurance letter, dated the First Closing Date and addressed to the Representatives, in form and substance reasonably satisfactory to the Representatives, and the Issuer shall have furnished to such counsel any documents they request for the purpose of enabling them to pass their negative assurance letter;

(f) The Issuer shall have requested and caused Marshall, Gerstein & Borun LLP, intellectual property counsel for the Issuer, to have furnished to the Representatives its intellectual property opinion, dated the First Closing Date and addressed to the Representatives, in form and substance reasonably satisfactory to the Representatives;

(g) The Representatives shall have received from Homburger AG, Swiss counsel for the Underwriters, their opinion, dated the First Closing Date and addressed to the Representatives, in form and substance reasonably satisfactory to the Representatives, and the Issuer shall have furnished to such counsel any documents they request for the purpose of enabling them to pass their opinion upon any matters agreed with the Representatives;

(h) The Issuer shall have furnished to the Representatives a certificate of the Issuer, signed by the Chief Executive Officer or President and the principal financial or accounting officer of the Issuer, dated the First Closing Date to the effect that the signers of such certificate have carefully examined the Registration Statement, the Disclosure Package, the Final Prospectus and any amendment or supplement thereto, as well as each electronic road show used in connection with the offering of the Securities, and this Underwriting Agreement and that:

(i) the representations and warranties of the Issuer in this Underwriting Agreement are true and correct on and as of the First Closing Date with the same effect as if made on the First Closing Date and the Issuer has complied with all the agreements and satisfied all the conditions on its part to be performed or satisfied at or prior to the First Closing Date;

(ii) no stop order suspending the effectiveness of the Registration Statement or any notice objecting to its use has been issued and no proceedings for that purpose have been instituted or, to the Issuer's knowledge, threatened; and

(iii) since the date of the most recent financial statements included in the Disclosure Package and the Final Prospectus (exclusive of any amendment or supplement thereto), there has been no material adverse change in the condition (financial or otherwise), prospects, earnings, business or properties of the Issuer and its subsidiaries, taken as a whole, whether or not arising from transactions in the ordinary course of business, except as set forth in or contemplated in the Disclosure Package and the Prospectus (exclusive of any amendment or supplement thereto);

(i) The Selling Shareholder shall have furnished to the Representatives a certificate, signed by the Selling Shareholder, dated the Option Closing Date, to the effect that the signer of such certificate has carefully examined the Registration Statement, the Disclosure Package, the Final Prospectus, any Issuer Free Writing Prospectus and any supplements or amendments thereto and this Agreement, and that the representations and warranties of the Selling Shareholder in this Agreement are true and correct in all material respects on and as of the Option Closing Date to the same effect as if made on the Option Closing Date;

(j) The Issuer shall have requested and caused Ernst & Young LLP, independent registered public accounting firm for the Issuer, to have furnished to the Representatives at the Execution Time and at the First Closing Date, letters, dated respectively as of the Execution Time and as of the First Closing Date, in form and substance reasonably satisfactory to the Representatives, and confirming that they are independent accountants within the meaning of the Securities Act and the Exchange Act and the applicable rules and regulations adopted by the SEC thereunder and that they have performed a review of the unaudited interim financial information of the Issuer for

the three- and six-month periods ended June 30, 2018 and as at June 30, 2018, in accordance with Statement on Auditing Standards No. 100;

(k) Subsequent to the Execution Time or, if earlier, the dates as of which information is given in the Registration Statement (exclusive of any amendment thereof) and the Final Prospectus (exclusive of any amendment or supplement thereto), there shall not have been (i) any change or decrease specified in the letter or letters referred to in paragraph (i) of this Section 6 or (ii) any change, or any development involving a prospective change, in or affecting the condition (financial or otherwise), earnings, business or properties of the Issuer and its subsidiaries taken as a whole, whether or not arising from transactions in the ordinary course of business, except as set forth in or contemplated in the Disclosure Package and the Final Prospectus (exclusive of any supplement thereto) the effect of which, in any case referred to in clause (i) or (ii) above, is, in the sole judgment of the Representatives, so material and adverse as to make it impractical or inadvisable to proceed with the offering or delivery of the Securities as contemplated by the Registration Statement (exclusive of any amendment thereof), the Disclosure Package and the Final Prospectus (exclusive of any amendment or supplement thereto);

(l) The Issuer shall have furnished to the Representatives at the Execution Time and at the First Closing Date, a certificate of the chief financial officer of the Issuer, dated respectively as of the Execution Time and the First Closing Date, in form and substance reasonably satisfactory to the Representatives, and to the effect that certain financial data identified by the Representatives was accurate and correct in all material respects;

(m) Prior to the First Closing Date and the Option Closing Date, the Issuer and the Selling Shareholder, as applicable, shall have furnished to the Representatives such further information, certificates and documents as the Representatives may reasonably request;

(n) The Securities shall have been listed and admitted and authorized for trading on The Nasdaq Global Market, and satisfactory evidence of such actions shall have been provided to the Representatives;

(o) At the Execution Time, the Issuer shall have furnished to the Representatives a letter substantially in the form of Exhibit B hereto from each officer and director of the Issuer and from certain specified holders of the equity securities of the Issuer addressed to the Representatives; and

(p) On the First Closing Date, the Subsidiaries shall be subsidiaries of the Issuer as specified in the Prospectus.

If any of the conditions specified in this Section 6 shall not have been fulfilled when and as provided in this Underwriting Agreement, or if any of the opinions and certificates mentioned above or elsewhere in this Underwriting Agreement shall not be reasonably satisfactory in form and substance to the Representatives and counsel for the Underwriters, this Underwriting

Agreement and all obligations of the Underwriters hereunder may be canceled at, or at any time prior to, the First Closing Date by the Representatives. Notice of such cancellation shall be given to the Issuer and the Selling Shareholder in writing or by telephone confirmed in writing.

The documents required to be delivered by this Section 6 shall be delivered at the office of Ropes & Gray LLP, counsel for the Underwriters, at Prudential Tower, 800 Boylston Street, Boston, MA 02199-3600, on the First Closing Date.

7. Reimbursement of Underwriters' Expenses. If the sale of the Securities provided for herein is not consummated because any condition to the obligations of the Underwriters set forth in Section 6 hereof is not satisfied, because of any termination pursuant to Section 10 hereof or because of any refusal, inability or failure on the part of the Issuer or any Selling Shareholder to perform any agreement herein or comply with any provision hereof other than by reason of a default by any of the Underwriters, the Issuer will reimburse the Underwriters severally through Goldman Sachs & Co. LLC on demand for all out-of-pocket expenses (including reasonable fees and disbursements of counsel) that shall have been reasonably incurred by them in connection with the proposed purchase and sale of the Securities.

8. Indemnification and Contribution.

(a) The Issuer agrees to indemnify and hold harmless each Underwriter, the directors, officers, employees, affiliates and agents of each Underwriter and each person who controls any Underwriter within the meaning of either the Securities Act or the Exchange Act against any and all losses, claims, damages or liabilities, joint or several, to which they or any of them may become subject under the Securities Act, the Exchange Act or other Federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based (i) upon any untrue statement or alleged untrue statement of a material fact contained in the registration statement for the registration of the Securities as originally filed, or any amendment thereof, arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, or (ii) upon any untrue statement or alleged untrue statement of a material fact included in the Base Prospectus, any Preliminary Prospectus, the Disclosure Package, the Final Prospectus or any Issuer Free Writing Prospectus or in any amendment thereof or supplement thereto or arise out of or are based upon the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading, and agrees to reimburse each such indemnified party, as incurred, for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action; provided, however, that the Issuer will not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon any such untrue statement or alleged untrue statement or omission or alleged omission made therein in reliance upon and in conformity with information furnished in writing to the Issuer by or on behalf of any Underwriter through the Representatives specifically for inclusion therein. This indemnity agreement will be in addition to any liability which the Issuer may otherwise have.

The Issuer agrees to indemnify and hold harmless each Underwriter, the directors, officers, employees, affiliates and agents of each Underwriter and each person who controls any Underwriter within the meaning of either the Securities Act or the Exchange Act from and against any and all losses, claims, damages and liabilities to which they may become subject under the Securities Act, the Exchange Act or other Federal, state or foreign statutory law or regulation, at common law or otherwise (including, without limitation, any legal or other expenses reasonably incurred in connection with defending or investigating any such action or claim), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) (i) arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in any prospectus or Issuer Free Writing Prospectus prepared in connection with the Rights Offering, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein, not misleading or (ii) related to, arising out of, or in connection with the Rights Offering.

The Selling Shareholder agrees, to indemnify and hold harmless each Underwriter, the directors, officers, employees, affiliates and agents of each Underwriter and each person who controls any Underwriter within the meaning of either the Securities Act or the Exchange Act from and against any and all losses, claims, damages or liabilities to which they or any of them may become subject under the Securities Act, the Exchange Act or other Federal or state statutory law or regulation, at common law or otherwise (including, without limitation, any legal or other expenses reasonably incurred in connection with defending or investigating any such action or claim), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based (i) upon any untrue statement or alleged untrue statement of a material fact contained in the registration statement for the registration of the Securities as originally filed, or any amendment thereof, arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, or (ii) upon any untrue statement or alleged untrue statement of a material fact included in the Base Prospectus, any Preliminary Prospectus, the Disclosure Package, the Final Prospectus or any Issuer Free Writing Prospectus or in any amendment thereof or supplement thereto or arise out of or are based upon the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading, and agrees to reimburse each such indemnified party, as incurred, for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action; but only with reference to the information relating to the Selling Shareholder furnished in writing by or on behalf of the Selling Shareholder expressly for use in the Registration Statement, any preliminary prospectus, the Preliminary Prospectus, any Issuer Free Writing Prospectus, or the Final Prospectus or any amendment or supplement thereto. This indemnity agreement will be in addition to any liability which the Selling Shareholder may otherwise have.

(b) Each Underwriter severally and not jointly agrees to indemnify and hold harmless the Issuer, each of its directors, each of its officers who signs the Registration

Statement, and each person who controls the Issuer within the meaning of either the Securities Act or the Exchange Act and the Selling Shareholder, to the same extent as the foregoing indemnity from the Issuer to each Underwriter, but only with reference to written information relating to such Underwriter furnished to the Issuer by or on behalf of such Underwriter through the Representatives specifically for inclusion in the documents referred to in the foregoing indemnity. This indemnity agreement will be in addition to any liability which any Underwriter may otherwise have. Each of the Issuer and the Selling Shareholder acknowledges that the statements set forth (i) in the last paragraph of the cover page regarding delivery of the Securities and, under the heading "Underwriting", (ii) the list of Underwriters and their respective participation in the sale of the Securities, (iii) the sentences related to concessions and reallowances and (iv) the paragraph related to stabilization, syndicate covering transactions and penalty bids in any Preliminary Prospectus and the Final Prospectus constitute the only information furnished in writing by or on behalf of the several Underwriters for inclusion in any Preliminary Prospectus, the Prospectus or any Issuer Free Writing Prospectus.

(c) Promptly after receipt by an indemnified party under this Section 8 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against the indemnifying party under this Section 8, notify the indemnifying party in writing of the commencement thereof; but the failure so to notify the indemnifying party (i) will not relieve it from liability under paragraph (a) or (b) above unless and to the extent it did not otherwise learn of such action and such failure results in the forfeiture by the indemnifying party of substantial rights and defenses and (ii) will not, in any event, relieve the indemnifying party from any obligations to any indemnified party other than the indemnification obligation provided in paragraph (a) or (b) above. The indemnifying party shall be entitled to appoint counsel of the indemnifying party's choice at the indemnifying party's expense to represent the indemnified party in any action for which indemnification is sought (in which case the indemnifying party shall not thereafter be responsible for the fees and expenses of any separate counsel retained by the indemnified party or parties except as set forth below); provided, however, that such counsel shall be satisfactory to the indemnified party. Notwithstanding the indemnifying party's election to appoint counsel to represent the indemnified party in an action, the indemnified party shall have the right to employ separate counsel (including local counsel), and the indemnifying party shall bear the reasonable fees, costs and expenses of such separate counsel (which, if the Issuer is the indemnifying party, shall be limited to one such separate counsel and one local counsel for any Underwriter together with all persons who control such Underwriter within the meaning of the Exchange Act or the Securities Act, and no more than two such separate counsel and two local counsel for all of the Underwriters) if (i) the use of counsel chosen by the indemnifying party to represent the indemnified party would present such counsel with a conflict of interest, (ii) the actual or potential defendants in, or targets of, any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, (iii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of the institution of such action or (iv) the indemnifying party

shall authorize the indemnified party to employ separate counsel at the expense of the indemnifying party. An indemnifying party will not, without the prior written consent of the indemnified parties, settle or compromise or consent to the entry of any judgment with respect to any pending or threatened claim, action, suit or proceeding in respect of which indemnification or contribution may be sought hereunder (whether or not the indemnified parties are actual or potential parties to such claim or action) unless such settlement, compromise or consent (i) includes an unconditional release of each indemnified party from all liability arising out of such claim, action, suit or proceeding and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any indemnified party.

(d) In the event that the indemnity provided in paragraph (a), (b) or (c) of this Section 8 is unavailable to or insufficient to hold harmless an indemnified party for any reason, the Issuer, the Selling Shareholder and the Underwriters severally agree to contribute to the aggregate losses, claims, damages and liabilities (including legal or other expenses reasonably incurred in connection with investigating or defending the same) (collectively "Losses") to which the Issuer, the Selling Shareholder and one or more of the Underwriters may be subject in such proportion as is appropriate to reflect the relative benefits received by the Issuer and the Selling Shareholder on the one hand and by the Underwriters on the other from the offering of the Securities. If the allocation provided by the immediately preceding sentence is unavailable for any reason, the Issuer, the Selling Shareholder and the Underwriters severally shall contribute in such proportion as is appropriate to reflect not only such relative benefits but also the relative fault of the Issuer on the one hand and of the Underwriters on the other in connection with the statements or omissions which resulted in such Losses as well as any other relevant equitable considerations. Benefits received by the Issuer and the Selling Shareholder shall be deemed to be equal to the total net proceeds from the offering (before deducting expenses) received by it, and benefits received by the Underwriters shall be deemed to be equal to the total underwriting discounts and commissions, in each case as set forth on the cover page of the Final Prospectus. Relative fault shall be determined by reference to, among other things, whether any untrue or any alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information provided by the Issuer or the Selling Shareholder on the one hand or the Underwriters on the other, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The Issuer, the Selling Shareholder and the Underwriters agree that it would not be just and equitable if contribution were determined by pro rata allocation or any other method of allocation which does not take account of the equitable considerations referred to above. Notwithstanding the provisions of this paragraph (d), in no event shall an Underwriter be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Securities exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. Notwithstanding the provisions of this paragraph (d), no person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 8, each person who

controls an Underwriter within the meaning of either the Securities Act or the Exchange Act and each director, officer, employee, affiliate and agent of an Underwriter shall have the same rights to contribution as such Underwriter, and each person who controls the Issuer within the meaning of either the Securities Act or the Exchange Act, each officer of the Issuer who shall have signed the Registration Statement and each director of the Issuer shall have the same rights to contribution as the Issuer, subject in each case to the applicable terms and conditions of this paragraph (d).

(e) The liability of the Selling Shareholder under the Selling Shareholder's representations and warranties contained in Section 1 hereof and under the indemnity and contribution agreements contained in this Section 8 shall be limited to an amount equal to the initial public offering price of the Selling Shareholder Option Securities sold by such Selling Shareholder to the Underwriters. The Issuer and the Selling Shareholder may agree, as among themselves and without limiting the rights of the Underwriters under this Agreement, as to the respective amounts of such liability for which they each shall be responsible.

9. Default by an Underwriter. If any one or more Underwriters shall fail to purchase and pay for any of the Securities agreed to be purchased by such Underwriter or Underwriters hereunder and such failure to purchase shall constitute a default in the performance of its or their obligations under this Underwriting Agreement, the remaining Underwriters shall be obligated severally to take up and pay for (in the respective proportions which the amount of Securities set forth opposite their names in Schedule II hereto bears to the aggregate amount of Securities set forth opposite the names of all the remaining Underwriters) the Securities which the defaulting Underwriter or Underwriters agreed but failed to purchase; provided, however, that in the event that the aggregate amount of Securities which the defaulting Underwriter or Underwriters agreed but failed to purchase shall exceed 10% of the aggregate amount of Securities set forth in Schedule II hereto, the remaining Underwriters shall have the right to purchase all, but shall not be under any obligation to purchase any, of the Securities, and if such non-defaulting Underwriters do not purchase all the Securities, this Underwriting Agreement will terminate without liability to any non-defaulting Underwriter, the Selling Shareholder or the Issuer. In the event of a default by any Underwriter as set forth in this Section 9, the First Closing Date shall be postponed for such period, not exceeding five Business Days, as the Representatives shall determine in order that the required changes in the Registration Statement and the Final Prospectus or in any other documents or arrangements may be effected. Nothing contained in this Underwriting Agreement shall relieve any defaulting Underwriter of its liability, if any, to the Issuer, the Selling Shareholder and any non-defaulting Underwriter for damages occasioned by its default hereunder.

10. Termination. This Underwriting Agreement shall be subject to termination in the absolute discretion of the Representatives, by notice given to the Issuer prior to delivery of and payment for the Securities, if at any time prior to such delivery and payment (i) trading in the Issuer's Common Shares shall have been suspended by the SEC or The Nasdaq Global Market or trading in securities generally on the New York Stock Exchange or The Nasdaq Global Market shall have been suspended or limited or minimum prices shall have been established on either of such exchanges, (ii) a banking moratorium shall have been declared either by Federal or New York State authorities, (iii) there shall have occurred a material

disruption in commercial banking or securities settlement or clearance services or (iv) there shall have occurred any outbreak or escalation of hostilities, declaration by the United States of a national emergency or war, or other calamity or crisis the effect of which on financial markets is such as to make it, in the sole judgment of the Representatives, impractical or inadvisable to proceed with the offering or delivery of the Securities as contemplated by the Preliminary Prospectus or the Final Prospectus (exclusive of any supplement thereto).

#### 11. Effects of Termination on Securities.

(a) If, after application and registration of the Underwritten Capital Increase and/or any Option Capital Increase with the Commercial Register of the Canton of Zug pursuant to Sections 3(b) or 4(b), prior to the First Closing Date or the relevant Option Closing Date, as the case may be, this Underwriting Agreement is terminated pursuant to Section 10, or if the delivery of the Underwritten Securities, First Applicable Issuer Option Securities, Second Applicable Issuer Option Securities or Selling Shareholder Option Securities to the Representatives for the account of the several Underwriters is not completed on the First Closing Date or the relevant Option Closing Date, as the case may be (each, an “Event of Non-Completion”), and unless the Issuer, the Selling Shareholder (but only with respect to the Selling Shareholder Option Securities, if applicable) and the Representatives, acting on behalf of the several Underwriters, otherwise agree within ten calendar days after the Event of Non-Completion, then:

- *with respect to the Selling Shareholder Option Securities only:*

(i) irrespective of whether the option granted to them under Section 2(c) has been exercised or not, and irrespective of whether the exercise period has lapsed or not, the Representatives, acting on behalf of the several Underwriters, shall be given the (or, as the case may be, a further) opportunity to declare whether or not they intend to exercise the option granted to them under Section 2(c) with respect to the Selling Shareholder Option Securities, and, in the case of a partial exercise, to indicate the number of Selling Shareholder Option Securities they elect to purchase from the Selling Shareholder; and

- *with respect to all other Securities (comprising the Underwritten Securities and the Issuer Option Securities):*

(i) the Issuer shall have a call option against the Underwriters pursuant to Section 11(b);

(ii) if the call option is not exercised, the Representatives acting on behalf of the several Underwriters shall have a put option against the Issuer pursuant to Section 11(c);

(iii) if the put option is not possible for legal reasons or insufficient to dispose of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as

applicable, or if such put option is not exercised within the deadline set forth in Section 11(c), the Issuer shall effect a capital reduction pursuant to Section 11(d); and

(iv) if the capital reduction is not effected in accordance with Section 11(d), the Underwriters may sell the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, in the market as provided in Section 11(e).

(b) Call Option.

(i) The Issuer, acting on its own behalf or on behalf of third parties, shall have the right (the “Call Option”) to request in writing that the Representatives, acting on behalf of the several Underwriters, deliver the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, to an account specified by the Issuer against payment of an amount representing the aggregate nominal value of the respective Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, plus expenses of the Representatives as set out in Section 11(f). The Call Option shall expire on the tenth calendar day after the Event of Non-Completion.

(ii) An acquisition of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, by the Issuer for its own account shall only be permitted if the Issuer has delivered evidence to the Representatives reasonably satisfactory to the Representatives that the Issuer has sufficient freely available reserves to acquire the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, under this Section 11(b) or, alternatively, that the Issuer has entered into arrangements with a third party other than any of the Issuer’s subsidiaries ensuring for the immediate re-sale of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, to such third party, at no less than their nominal value, on the date of acquisition of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, by the Issuer.

(c) Put Option.

(i) Following the expiry of the Call Option pursuant to Section 11(b), the Representatives, acting on behalf of the several Underwriters, shall have an option (the “Put Option”) to require the Issuer, subject to article 659 CO, to purchase all Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, entered in the Commercial Register of the Canton of Zug at

their nominal value, plus expenses of the Representatives as set out in Section 11(f), within ten calendar days after receipt of a notice in writing addressed to the Issuer from the Representatives, stating that the Representatives exercise the Put Option. The Put Option shall expire on the twentieth calendar day after the Event of Non-Completion.

(ii) The notice in which the Representatives, acting on behalf of the several Underwriters, exercise the Put Option shall specify the date on which the Representatives will deliver the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, to the Issuer against direct payment therefor, and shall contain detailed instructions regarding payment, delivery of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, and amount payable (including satisfactory details regarding the costs claimed according to Section 11(f)).

(d) Capital Reduction.

(i) If the Put Option is not exercised within the deadline set forth in Section 11(c) or it is not possible for legal reasons or insufficient to dispose of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, including due to non-availability of sufficient freely disposable reserves, the Issuer shall immediately call a shareholders' meeting and table the reduction of the share capital. Such shareholders' meeting shall take place no later than seventy days after the Event of Non-Completion. The Representatives will vote in favor of a reduction of the issued and outstanding share capital of the Issuer (the "Capital Reduction") by cancellation of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, entered in the Commercial Register of the Canton of Zug against repayment of the aggregate nominal value of such securities to the Representatives, acting on behalf of the several Underwriters. Prior to such shareholders' meeting, the Issuer shall use its reasonable best efforts to cause its auditors to confirm in writing, pursuant to article 732 para. 2 CO, that the claims of the Issuer's creditors are fully covered notwithstanding the Capital Reduction, provided that if such confirmation is not made by the auditors prior to such meeting, the meeting shall be cancelled. The Issuer shall use its best efforts to cause its shareholders to vote in favor of the Capital Reduction.

(ii) At the earliest possible date, and subject to statutory law, the Capital Reduction shall be consummated by registration in the Commercial Register of the Canton of Zug. The proceeds of the Capital Reduction, being an amount representing the aggregate nominal value of the Underwritten Securities, First Applicable Issuer Option Securities or

Second Applicable Issuer Option Securities, as applicable, shall be paid (for value on the date of the entry in the Commercial Register of the Canton of Zug) in cash to the Representatives, acting on behalf of the several Underwriters.

(iii) Upon consummation of the Capital Reduction, the Issuer shall deregister the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, in its book of uncertificated securities (*Wertrechtbuch*) to reflect the number of Securities registered with the Commercial Register of the Canton of Zug.

(e) Sale of Underwritten Securities or Issuer Option Securities. In addition, if an Event of Non-Completion occurs and,

(i) the Issuer fails to acquire or cause a third party to acquire the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, in accordance with Section 11(b) within ten calendar days after the Event of Non-Completion; and

(ii) in the event and to the extent the Put Option is not possible for legal reasons or insufficient to dispose of the Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, including due to insufficient freely disposable reserves, or if the Put Option is not exercised within the deadline set forth in Section 11(c); and

(iii) the Capital Reduction has not been resolved by the shareholders' meeting of the Issuer within seventy days after the Event of Non-Completion,

the Representatives, acting on behalf of the several Underwriters, are entitled to sell any or all Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities on terms which the Representatives deem fit under the circumstances. The difference between the proceeds of such sale and the nominal amount of such Underwritten Securities, First Applicable Issuer Option Securities or Second Applicable Issuer Option Securities, as applicable, sold, less the costs and expenses pursuant to Section 11(f) reasonably incurred by the Representatives in connection with the sale, if any, shall be transferred to the Issuer.

(f) Costs; Indemnity.

(i) The Issuer shall bear (a) all costs directly incidental to the Capital Reduction, including but not limited to notarization costs, costs of the Commercial Register and costs of publication of the Capital Reduction and (b) the costs of the Representatives reasonably incurred in connection with the Call Option, the Put Option or the Capital Reduction, as

applicable (including, but not limited to, (x) non-income taxes imposed by a jurisdiction other than the jurisdiction of incorporation of the applicable Representative, (y) interest at a rate of the 3-month CHF LIBOR, calculated on a 30/360 basis, following the Event of Non-Completion until the payment of proceeds to the Representatives, acting on behalf of the several Underwriters, and (z) reasonable out-of-pocket expenses of the Representatives and their counsel).

(ii) The Issuer further undertakes to indemnify the Representatives for, and to hold the Representatives harmless from, any reasonable costs, expenses, third-party claims and liabilities, actual or contingent, that may be incurred by or made against the Representatives in connection with the Capital Reduction.

12. Representations and Indemnities to Survive. The respective agreements, representations, warranties, indemnities and other statements of the Issuer or its officers, of the Selling Shareholder and of the Underwriters set forth in or made pursuant to this Underwriting Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter, the Selling Shareholder or the Issuer or any of the officers, directors, employees, agents, affiliates or controlling persons referred to in Section 8 hereof, and will survive delivery of and payment for the Securities. The provisions of Sections 7 and 8 hereof shall survive the termination or cancellation of this Underwriting Agreement.

13. Notices. All communications hereunder will be in writing and effective only on receipt, and, if sent to the Representatives, will be mailed by courier or registered mail, delivered or transmitted by standard form of telecommunication to Goldman Sachs & Co. LLC at 200 West Street, New York, New York 10282, Attention: Registration Department; or, if sent to CRISPR Therapeutics AG, will be mailed, by courier or registered mail, delivered or transmitted by standard form of communication to CRISPR Therapeutics AG, Baarerstrasse 14, 6300 Zug, Switzerland, Attention: CEO, with copies (which shall not constitute notice) to: VISCHER AG, Aeschenvorstadt 4, CH-4051 Basel, Switzerland, Attention: Dr. Matthias Staehelin, facsimile: 41 58 211 33 10; Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210, Attention: Mitchell S. Bloom and Robert E. Puopolo, facsimile: (617) 321-4377; or, if sent to the Selling Shareholder, Attention: Dr. Rodger Novak c/o CRISPR Therapeutics AG, Baarerstrasse 14, 6300 Zug, Switzerland.

14. Successors. This Underwriting Agreement will inure to the benefit of and be binding upon the parties hereto and their respective successors and the officers, directors, employees, agents and controlling persons referred to in Section 8 hereof, and no other person will have any right or obligation hereunder.

15. Jurisdiction. The Issuer agrees that any suit, action or proceeding against the Issuer brought by any Underwriter, the directors, officers, employees, affiliates and agents of any Underwriter, or by any person who controls any Underwriter, arising out of or based upon this Underwriting Agreement or the transactions contemplated hereby may be instituted in any State or U.S. federal court in The City of New York and County of New York, and waives any objection which it may now or hereafter have to the laying of venue of any such proceeding, and

irrevocably submits to the exclusive jurisdiction of such courts in any suit, action or proceeding. The Issuer hereby appoints CT Corporation System, located at 155 Federal Street, Suite 700, Boston, MA 02110, as its authorized agent (the “Authorized Agent”) upon whom process may be served in any suit, action or proceeding arising out of or based upon this Underwriting Agreement or the transactions contemplated herein that may be instituted in any State or U.S. federal court in The City of New York and County of New York, by any Underwriter, the directors, officers, employees, affiliates and agents of any Underwriter, or by any person who controls any Underwriter, and expressly accepts the exclusive jurisdiction of any such court in respect of any such suit, action or proceeding. The Issuer hereby represents and warrants that the Authorized Agent has accepted such appointment and has agreed to act as said agent for service of process, and the Issuer agrees to take any and all action, including the filing of any and all documents that may be necessary to continue such appointment in full force and effect as aforesaid. Service of process upon the Authorized Agent shall be deemed, in every respect, effective service of process upon the Issuer. Notwithstanding the foregoing, any action arising out of or based upon this Underwriting Agreement may be instituted by any Underwriter, the directors, officers, employees, affiliates and agents of any Underwriter, or by any person who controls any Underwriter, in any court of competent jurisdiction in Switzerland.

16. Bail-In Provision. Notwithstanding any other term of this Underwriting Agreement or any other agreements, arrangements, or understanding between the Underwriters and the Issuer, the Issuer acknowledges, accepts, and agrees to be bound by:

(a) the effect of the exercise of Bail-in Powers by the Relevant Resolution Authority in relation to any BRRD Liability of the Underwriters to the Issuer under this agreement, that (without limitation) may include and result in any of the following, or some combination thereof:

(i) the reduction of all, or a portion, of the BRRD Liability or outstanding amounts due thereon;

(ii) the conversion of all, or a portion, of the BRRD Liability into shares, other securities or other obligations of the Underwriters or another person (and the issue to or conferral on the Issuer of such shares, securities or obligations);

(iii) the cancellation of the BRRD Liability;

(iv) the amendment or alteration of any interest, if applicable, thereon, the maturity or the dates on which any payments are due, including by suspending payment for a temporary period;

(b) the variation of the terms of this Underwriting Agreement, as deemed necessary by the Relevant Resolution Authority, to give effect to the exercise of Bail-in Powers by the Relevant Resolution Authority.

(c) As used in this Section 16, “Bail-in Legislation” means in relation to a member state of the European Economic Area which has implemented, or which at any time implements, the BRRD, the relevant implementing law, regulation, rule or requirement as described in the EU Bail-in Legislation Schedule from time to time;

“Bail-in Powers” means any Write-down and Conversion Powers as defined in relation to the relevant Bail-in Legislation; “BRRD” means Directive 2014/59/EU establishing a framework for the recovery and resolution of credit institutions and investment firms; “EU Bail-in Legislation Schedule” means the document described as such, then in effect, and published by the Loan Market Association (or any successor person) from time to time at <http://www.lma.eu.com/>; “BRRD Liability” has the same meaning as in such laws, regulations, rules or requirements implementing the BRRD under the applicable Bail-in Legislation; and “Relevant Resolution Authority” means the resolution authority with the ability to exercise any Bail-in Powers in relation to the Underwriters.

17. No Fiduciary Duty. The Issuer and the Selling Shareholder hereby acknowledge that (a) the purchase and sale of the Securities pursuant to this Underwriting Agreement is an arm’s-length commercial transaction between the Issuer and the Selling Shareholder, on the one hand, and the Underwriters and any affiliate through which it may be acting, on the other, (b) the Underwriters are acting as principal and not as an agent or fiduciary of the Issuer or the Selling Shareholder and (c) the engagement of the Underwriters by the Issuer and the Selling Shareholder in connection with the offering and the process leading up to the offering is as independent contractors and not in any other capacity. Furthermore, each of the Issuer and the Selling Shareholder agrees that it is solely responsible for making its own judgments in connection with the offering (irrespective of whether any of the Underwriters has advised or is currently advising the Issuer on related or other matters). Each of the Issuer and the Selling Shareholder agrees that it will not claim that the Underwriters have rendered advisory services of any nature or respect, or owe an agency, fiduciary or similar duty to it, in connection with such transaction or the process leading thereto.

18. Integration. This Underwriting Agreement supersedes all prior agreements and understandings (whether written or oral) between the Issuer and the Underwriters, or any of them, with respect to the subject matter hereof.

19. Applicable Law. This Underwriting Agreement will be governed by and construed in accordance with the laws of the State of New York applicable to contracts made and to be performed within the State of New York.

20. Waiver of Jury Trial. The Issuer, the Selling Shareholder and the Underwriters hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Underwriting Agreement or the transactions contemplated hereby.

21. Counterparts. This Underwriting Agreement may be signed in one or more counterparts, each of which shall constitute an original and all of which together shall constitute one and the same agreement.

22. Headings. The section headings used herein are for convenience only and shall not affect the construction hereof.

If the foregoing is in accordance with your understanding of our agreement, please sign and return to us the enclosed duplicate hereof, whereupon this letter and your acceptance shall represent a binding agreement among the Issuer, the Selling Shareholder and the several Underwriters.

Very truly yours,

CRISPR Therapeutics AG

By: /s/ Samarth Kulkarni, Ph.D.

Name: Samarth Kulkarni, Ph.D.

Title: Chief Executive Officer

The Selling Shareholder

/s/ Rodger Novak, M.D.

By: Rodger Novak, M.D.

[Signature Page to Underwriting Agreement]

The foregoing Underwriting Agreement is hereby confirmed and accepted as of the date first above written.

Goldman Sachs & Co. LLC  
Piper Jaffray & Co.  
Barclays Capital Inc.

By: Goldman Sachs & Co. LLC

By: /s/ Goldman Sachs & Co. LLC  
Name: David Bauer  
Title: Managing Director

By: Piper Jaffray & Co.

By: /s/ Piper Jaffray & Co.  
Name: Chris Collins  
Title: Managing Director

By: Barclays Capital Inc.

By: /s/ Barclays Capital Inc.  
Name: Jason Haas  
Title: Managing Director

For themselves and the other several Underwriters named in Schedule II to the foregoing Underwriting Agreement.

[Signature Page to Underwriting Agreement]

SCHEDULE I

1. Number of Underwritten Securities to be sold by the Issuer: 4,210,526
2. Maximum Number of Option Securities to be sold by the Issuer: 531,578
3. Price per Share to Public: \$47.50

SCHEDULE II

| <u>Underwriters</u>         | <u>Number of<br/>Underwritten<br/>Securities<br/>to be Purchased</u> |
|-----------------------------|--|
| Goldman Sachs & Co. LLC     | 1,600,000  |
| Piper Jaffray & Co.         | 1,052,632  |
| Barclays Capital Inc.       | 589,474  |
| Wells Fargo Securities, LLC | 463,158  |
| Guggenheim Securities, LLC  | 252,631  |
| Needham & Company, LLC      | 252,631  |
| Total                       | <u>4,210,526</u>   |

SCHEDULE III

| <u>Selling Shareholder:</u>   | <u>Number of<br/>Underwritten<br/>Securities to be<br/>Sold by the<br/>Selling Shareholder</u> | <u>Maximum<br/>Number of<br/>Option Securities<br/>to be Sold by the<br/>Selling Shareholder</u> |
|---|--|--|
| Rodger Novak, M.D.<br>c/o CRISPR Therapeutics AG, Baarerstrasse 14,<br>6300 Zug Switzerland | 0  | 100,000  |
| Total   | <u>0</u>   | <u>100,000</u>   |

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SCHEDULE IV

Electronic roadshow presentation, that was available at [www.roadshowaccess.com](http://www.roadshowaccess.com).

ANNEX A

CRISPR Therapeutics Limited

CRISPR Therapeutics, Inc.

TRACR Hematology Ltd

## SUBSCRIPTION FORM

Making reference to the contemplated capital increase of CRISPR Therapeutics AG (the "**Company**") from CHF \_\_\_\_\_ through the issuance of \_\_\_\_\_ fully paid-in shares with a nominal value of CHF 0.03 each, to CHF \_\_\_\_\_ the undersigned

Goldman Sachs & Co. LLC, 200 West Street, New York, New York 10282,

acting in its own name but for the accounts of itself, Piper Jaffray & Co., Barclays Capital Inc., Wells Fargo Securities, LLC, Guggenheim Securities, LLC and Needham & Company, LLC hereby subscribes for \_\_\_\_\_ common shares with a nominal value of CHF 0.03 each, with a total nominal value of CHF \_\_\_\_\_ and irrevocably and unconditionally undertakes to pay the total subscription price of CHF \_\_\_\_\_ not later than 4:00 a.m. (New York City Time) on 21 September 2018 to the following bank account:

Name of bank: UBS AG, Basel, Switzerland

Beneficiary/Formal account holder: CRISPR Therapeutics AG, Zug

Account Number: 233-236625.D7F

IBAN: CH9700233233236625D7F

Clearing: 0233

SWIFT: UBSWCHZH80A

The undersigned has taken note of the articles of association of the Company as well as the resolution taken on the shareholders' meeting of 30 May 2018, the resolution to be taken on the meeting of the Board of Directors on or around 21 September 2018, the underwriting agreement concluded between the Company as issuer, Rodger Novak as selling shareholder and the undersigned, Piper Jaffray & Co. and Barclays Capital Inc. as representatives of the several underwriters as defined therein on or around 20 September 2018, and the issue final prospectus supplement of the Company as filed with the U.S. Securities and Exchange Commission on or around 21 September 2018.

Any applicable Swiss issuance stamp duties will be borne by the Company. The newly issued shares shall be entitled to dividend for the business year 2018.

This Subscription Form is valid until 25 September 2018.

[Signatures are on the following page]

Zurich, 21 September 2018

Goldman Sachs & Co. LLC

Represented by Homburger AG, Zurich, based on the power of attorney attached hereto as Annex 1.

By: \_\_\_\_\_  
Name:  
Title:

**POWER OF ATTORNEY**

In connection with the public offering (the "Offering") by CRISPR Therapeutics AG (the "Company") of \_\_\_\_\_ common shares, nominal value CHF 0.03 per share, of the Company ("Common Shares"), the undersigned hereby constitutes and appoints every attorney of Homburger AG, Zurich, Switzerland ("HOMBURGER") the undersigned's true and lawful attorney-in-fact to:

- (i) execute for and on behalf of the undersigned, acting in its own name but for the accounts of itself, Piper Jaffray & Co., Barclays Capital Inc., Wells Fargo Securities, LLC, Guggenheim Securities, LLC and Needham & Company, LLC, as the several underwriters in the Offering (the "Underwriters"), a subscription form (the "Subscription Form"), substantially in the form as enclosed hereto as Exhibit A, providing for a capital increase of an additional \_\_\_\_\_ Common Shares (the "Additional Capital"), in exchange for payment by the undersigned of CHF \_\_\_\_\_, representing the nominal value for the Additional Capital; and
- (ii) take any other action of any type whatsoever in connection with the foregoing which, in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned.

This Power of Attorney is valid until 25 September 2018.

[Signatures are on the following page]

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of \_\_\_\_\_ September, 2018.

By: Goldman Sachs & Co. LLC

By: \_\_\_\_\_  
Name:  
Title:

## SUBSCRIPTION FORM

Making reference to the contemplated capital increase of CRISPR Therapeutics AG (the "**Company**") from CHF \_\_\_\_\_ through the issuance of \_\_\_\_\_ fully paid-in shares with a nominal value of CHF 0.03 each, to CHF \_\_\_\_\_ the undersigned

Goldman Sachs & Co. LLC, 200 West Street, New York, New York 10282,

acting in its own name but for the accounts of itself, Piper Jaffray & Co., Barclays Capital Inc., Wells Fargo Securities, LLC, Guggenheim Securities, LLC and Needham & Company, LLC hereby subscribes for \_\_\_\_\_ common shares with a nominal value of CHF 0.03 each, with a total nominal value of CHF \_\_\_\_\_ and irrevocably and unconditionally undertakes to pay the total subscription price of CHF \_\_\_\_\_ not later than 4:00 a.m. (New York City Time) on 21 September 2018 to the following bank account:

Name of bank: UBS AG, Basel, Switzerland

Beneficiary/Formal account holder: CRISPR Therapeutics AG, Zug

Account Number: 233-236629.D7J

IBAN: CH6600233233236629D7J

Clearing: 0233

SWIFT: UBSWCHZH80A

The undersigned has taken note of the articles of association of the Company as well as the resolution taken on the shareholders' meeting of 30 May 2018, the resolution to be taken on the meeting of the Board of Directors on or around \_\_\_\_ September 2018, the underwriting agreement concluded between the Company as issuer, Rodger Novak as selling shareholder and the undersigned, Piper Jaffray & Co. and Barclays Capital Inc. as representatives of the several underwriters as defined therein on or around 20 September 2018, and the issue final prospectus supplement of the Company as filed with the U.S. Securities and Exchange Commission on or around 21 September 2018.

Any applicable Swiss issuance stamp duties will be borne by the Company. The newly issued shares shall be entitled to dividend for the business year 2018.

This Subscription Form is valid until \_\_\_\_ September 2018.

[Signatures are on the following page]

Zurich, \_\_\_\_\_ September 2018

Goldman Sachs & Co. LLC

Represented by Homburger AG, Zurich, based on the power of attorney attached hereto as Annex 1.

By: \_\_\_\_\_  
Name:  
Title:

**POWER OF ATTORNEY**

In connection with the public offering (the "Offering") by CRISPR Therapeutics AG (the "Company") of \_\_\_\_\_ common shares, nominal value CHF 0.03 per share, of the Company ("Common Shares"), the undersigned hereby constitutes and appoints every attorney of Homburger AG, Zurich, Switzerland ("HOMBURGER") the undersigned's true and lawful attorney-in-fact to:

- (iii) execute for and on behalf of the undersigned, acting in its own name but for the accounts of itself, Piper Jaffray & Co., Barclays Capital Inc., Wells Fargo Securities, LLC, Guggenheim Securities, LLC and Needham & Company, LLC, as the several underwriters in the Offering (the "Underwriters"), a subscription form (the "Subscription Form"), substantially in the form as enclosed hereto as Exhibit A, providing for a capital increase of an additional \_\_\_\_\_ Common Shares (the "Additional Capital"), in exchange for payment by the undersigned of CHF \_\_\_\_\_, representing the nominal value for the Additional Capital; and
- (iv) take any other action of any type whatsoever in connection with the foregoing which, in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned.

This Power of Attorney is valid until \_\_\_\_\_.

[Signatures are on the following page]

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of \_\_\_\_\_, 2018.

By: Goldman Sachs & Co. LLC

By: \_\_\_\_\_  
Name:  
Title:

CRISPR Therapeutics AG  
Public Offering of Common Shares

September \_\_\_\_, 2018

Goldman Sachs & Co. LLC  
Piper Jaffray & Co.  
Barclays Capital Inc.

As Representatives of the several Underwriters,

c/o Goldman Sachs & Co. LLC  
200 West Street  
New York, New York 10282c/o Piper Jaffray & Co.  
345 Park Avenue, Suite 1200  
New York, New York 10154c/o Barclays Capital Inc.  
745 Seventh Avenue  
New York, New York 10019

Ladies and Gentlemen:

This letter is being delivered to you in connection with the proposed underwriting agreement (the "Underwriting Agreement"), among CRISPR Therapeutics AG, a stock corporation (*Aktiengesellschaft*) incorporated under the laws of Switzerland (the "Issuer"), and each of you as representatives of a group of underwriters named therein (the "Underwriters"), relating to an underwritten public offering of common shares, nominal value CHF 0.03 per share (the "Common Shares"), of the Issuer (the "Offering").

In order to induce you and the other Underwriters to enter into the Underwriting Agreement, the undersigned will not, without the prior written consent of each of Goldman Sachs & Co. LLC, Piper Jaffray & Co. and Barclays Capital Inc. (together, the "Representatives"), offer, sell, contract to sell, pledge or otherwise dispose of, (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the undersigned or any affiliate of the undersigned or any person in privity with the undersigned or any affiliate of the undersigned), directly or indirectly, including the filing (or participation in the filing) of a registration statement with the Securities and Exchange Commission (the "SEC") in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the rules and regulations of the SEC promulgated thereunder with respect to, any shares of capital stock of the Issuer or any securities convertible into, or exercisable or exchangeable for such capital stock, or publicly announce an intention to effect any such transaction, for a period commencing on the date

hereof and continuing through 90 days after the date of the Underwriting Agreement (the “Lockup Period”), other than:

- (i) sales of Common Shares by the undersigned to the Underwriters pursuant to the Underwriting Agreement;
- (ii) transactions relating to Common Shares or other securities convertible or exercisable into Common Shares acquired in open market transactions after the completion of the Offering;
- (iii) transfers of shares of capital stock of the Issuer or any securities convertible into, or exercisable or exchangeable for, such capital stock as a bona fide gift;
- (iv) exercise of options or warrants to purchase Common Shares or the receipt of Common Shares upon the vesting of restricted Common Share awards and any related transfer of Common Shares to the Issuer in connection therewith (x) deemed to occur upon the “cashless” or “net” exercise of such options or warrants or (y) for the purpose of paying the exercise price of such options or warrants or for paying taxes due as a result of the exercise of such options or warrants, the vesting of such options, warrants or Common Share awards, or as a result of the vesting of such Common Shares, it being understood that all Common Shares received upon such exercise, vesting or transfer will remain subject to the restrictions of this agreement during the Lock-Up Period, *provided* that any public filing or public announcement required or voluntarily made during the Lock-Up Period in connection with such transfer shall clearly indicate that such transfer was made pursuant to the circumstances described in this clause (iv);
- (v) transfers or dispositions of shares of capital stock of the Issuer or any securities convertible into, or exercisable or exchangeable for, such capital stock to the spouse, domestic partner, parent, child or grandchild or first cousin of the undersigned (each, an “Immediate Family Member”) or to a trust formed for the direct or indirect benefit of the undersigned or an Immediate Family Member;
- (vi) transfers or dispositions of shares of capital stock of the Issuer or any securities convertible into, or exercisable or exchangeable for, such capital stock by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or trustee of the undersigned;
- (vii) transfers or dispositions of shares of capital stock of the Issuer or any securities convertible into, or exercisable or exchangeable for, such capital stock pursuant to a divorce settlement agreement or decree or a qualified domestic relations order as defined in the United States Employee Retirement Income Security Act of 1974, as amended, or similar foreign laws;
- (viii) transfers or dispositions of shares of capital stock of the Issuer or any securities convertible into, or exercisable or exchangeable for, such capital stock

to any affiliate (as such term is defined in Rule 405 of the Securities Act of 1933, as amended), limited partners, general partners, limited liability company members or shareholders of the undersigned, or if the undersigned is a corporation to any wholly owned subsidiary of such corporation;

(ix) if the undersigned is an officer or director of the Issuer, the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of Common Shares or securities convertible into or exchangeable for Common Shares, *provided* that such plan does not provide for the transfer of Common Shares during the Lock-Up Period; and

(x) transfers of Common Shares to the Issuer pursuant to agreements under which the Issuer has the option to repurchase such Common Shares upon termination of the undersigned's employment with the Issuer, *provided* that the repurchase price for any such Common Shares shall not exceed the original purchase price paid by the undersigned to the Issuer for such Common Shares;

*provided* that in each case (other than (i)), no filing under Section 13 or Section 16(a) of the Exchange Act or any other public filing or announcement shall be required or voluntarily made by the undersigned or the recipient during the Lock-Up Period; *provided further* that, in the case of any transfer or distribution pursuant to clauses (iii), (v), (vi), (vii) and (viii), (a) the recipient agrees to be bound in writing by the same restrictions set forth herein for the duration of the Lock-Up Period and (b) any such transfer shall not involve a disposition for value.

The restrictions contained herein shall not apply to any transfers, sales, tenders or other dispositions of Common Shares or any security convertible into or exercisable or exchangeable for Common Shares pursuant to a bona fide third-party tender offer, merger, amalgamation, consolidation or other similar transaction made to or involving all holders of the Common Shares or such other securities pursuant to a change of control of the ownership of the Issuer provided that such transaction is approved by the Issuer's Board of Directors (including, without limitation, the entry into any lock-up, voting or similar agreement pursuant to which the undersigned may agree to transfer, sell, tender or otherwise dispose of Common Shares or other such securities in favor of any such transaction); *provided* that, if such tender offer, merger, amalgamation, consolidation or other similar transaction is not completed, any Common Shares or any security convertible into or exercisable or exchangeable for Common Shares subject to this letter agreement shall remain subject to the restrictions contained in this letter agreement. For purposes of this letter agreement, "change of control" shall mean the consummation of any bona fide third party tender offer, merger, amalgamation, consolidation or other similar transaction the result of which is that any "person" (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, other than the Issuer, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of 50% of the total voting power of the voting stock of the Issuer.

This agreement shall automatically terminate and the undersigned shall be released from all obligations under this letter upon the earliest to occur, if any, of (i) the Issuer, on the one hand, or the Representatives, on the other hand, advising the other in writing, prior to

the execution of the Underwriting Agreement, that they have determined not to proceed with the Offering, (ii) the Underwriting Agreement being terminated prior to the First Closing Date (as defined in the Underwriting Agreement), (iii) the registration statement filed with the SEC with respect to the Offering being withdrawn and (iv) October 31, 2018, if the Offering has not been completed by such date.

Yours very truly,

*[insert officer, director or shareholder]*

By: \_\_\_\_\_

Name:

Title:

**VISCHER Ltd****Basel**

Aeschenvorstadt 4  
CH-4010 Basel  
Switzerland  
Phone +41 58 211 33 00  
Fax +41 58 211 33 10

**Zurich**

Schützengasse 1  
CH-8021 Zurich  
Switzerland  
Phone +41 58 211 34 00  
Fax +41 58 211 34 10

Civil Law Notaries in Basel-City

CRISPR Therapeutics AG  
Baarerstrasse 14  
6300 Zug

Basel, September 20, 2018

**CRISPR Therapeutics AG – Registration Statement on Form S-3**

Dear Sir or Madam,

We have acted as Swiss counsel to CRISPR Therapeutics AG (the “**Company**”), a company incorporated under the laws of the Switzerland, in connection with the Company’s registration statement on Form S-3 as filed with the U.S. Securities and Exchange Commission (the “**Commission**”), as amended or supplemented (the “**Registration Statement**”), with respect to the registration under the U.S. Securities Act of 1933, as amended (the “**Securities Act**”), and the related prospectus covering the Shelf Securities dated September 19, 2018 in the form first used to confirm sales of the offered securities (the “**Prospectus**”) supplemented by the prospectus supplement (the “**Supplement**”) specifically relating to the offer and sale of 4,742,104 new ordinary shares of the Company (the “**New Shares**”). The New Shares will be created through the issuing of 4,742,104 new ordinary shares by the Company pursuant to a capital increase under Swiss Law.

**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 originals or copies, certified or otherwise identified to our satisfaction, of (i) the Registration Statement, (ii) the Prospectus, (iii) the Supplement, (iv) a copy of the coordinated articles of association of the Company as at May 30, 2018 and

(vi) such corporate documents and records of the Company and such other instruments, certificates and documents as we have deemed necessary or appropriate as a basis for the opinions hereinafter expressed. In such examinations, we have assumed the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies or drafts of documents to be executed, the genuineness of all signatures and the legal competence or capacity of persons or entities to complete the execution of documents. As to various questions of fact that are material to the opinions hereinafter expressed, we have relied upon statements or certificates of public officials, directors and officers of the Company and others.

The documents referred to above in paragraphs 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 New Shares, when sold and upon registration of the corresponding share capital increase into the Commercial Register of the Canton of Zug, 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 New 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

**CRISPR THERAPEUTICS ANNOUNCES PROPOSED PUBLIC OFFERING OF COMMON SHARES**

ZUG, Switzerland and CAMBRIDGE, Mass., Sept. 19, 2018 (GLOBE NEWSWIRE) — CRISPR Therapeutics (Nasdaq:CRSP), a biopharmaceutical company focused on developing transformative gene-based medicines for serious diseases, today announced that it is commencing an underwritten public offering of \$200,000,000 of its common shares. In addition, the underwriters will have a 30-day option to purchase up to \$30,000,000 of additional common shares at the public offering price less the underwriting discount.

Goldman Sachs & Co. LLC, Piper Jaffray & Co., Barclays Capital Inc. and Wells Fargo Securities, LLC are acting as joint book-running managers for the offering. Guggenheim Securities, LLC and Needham & Company, LLC are acting as co-managers for the offering. The offering is subject to market and other conditions, and there can be no assurance as to whether or when the offering may be completed or as to the actual size or terms of the offering.

An automatic shelf registration statement on Form S-3ASR relating to these securities has been filed with the Securities and Exchange Commission (SEC) and has become effective. This press release shall not constitute an offer to sell or a solicitation of an offer to buy, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

The offering will be made only by means of a prospectus. A copy of the prospectus supplement relating to the offering will be filed with the SEC and may be obtained, when available, from Goldman, Sachs & Co. LLC by mail at 200 West Street, New York, NY 10282, Attention: Prospectus Department, by telephone at (866) 471-2526, or by email at [prospectus-ny@ny.email.gs.com](mailto:prospectus-ny@ny.email.gs.com); from Piper Jaffray & Co., Attn: Prospectus Department, 800 Nicollet Mall, J12S03, Minneapolis, MN 55402, by telephone at (800) 747-3924, or by email at [prospectus@pjc.com](mailto:prospectus@pjc.com); Barclays Capital Inc., c/o Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, NY 11717, by telephone at (888) 603-5847 or by email at [Barclaysprospectus@broadridge.com](mailto:Barclaysprospectus@broadridge.com); or from Wells Fargo Securities, LLC, Attn: Equity Syndicate Department, 375 Park Avenue, New York, New York 10152, or by email at [cmclientsupport@wellsfargo.com](mailto:cmclientsupport@wellsfargo.com), or by telephone at (800) 326-5897.

**About CRISPR Therapeutics**

CRISPR Therapeutics is a leading gene-editing company focused on developing transformative gene-based medicines for serious diseases using its proprietary CRISPR/Cas9 gene-editing platform. CRISPR Therapeutics AG is headquartered in Zug, Switzerland, with its wholly-owned U.S. subsidiary, CRISPR Therapeutics, Inc., and R&D operations based in Cambridge, Massachusetts.

**Cautionary Note Regarding Forward-Looking Statements**

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, statements regarding CRISPR Therapeutics' anticipated public offering. The words "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "estimate," "predict," "project," "potential," "continue," "target" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Any forward-looking statements in this press release, such as the intended offering terms, are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this press release, including, without limitation, uncertainties related to market conditions and the completion of the public offering on the anticipated terms or at all. These and other risks and uncertainties are described in greater detail in the section entitled

“Risk Factors” in CRISPR Therapeutics’ Annual Report on Form 10-K for the year ended December 31, 2017, as filed with the SEC on March 8, 2018, the prospectus supplement related to the public offering and other filings that CRISPR Therapeutics may make with the SEC in the future. Any forward-looking statements contained in this press release represent CRISPR Therapeutics’ views only as of the date hereof and should not be relied upon as representing its views as of any subsequent date. CRISPR Therapeutics explicitly disclaims any obligation to update any forward-looking statements.

CRISPR Investor Contact:  
Susan Kim  
617-307-7503  
susan.kim@crisprtx.com

CRISPR Media Contact:  
Jennifer Paganelli  
WCG on behalf of CRISPR  
347-658-8290  
jpaganelli@wcgworld.com

## CRISPR Therapeutics Announces Pricing of Public Offering of Common Shares

ZUG, Switzerland and CAMBRIDGE, Mass., Sept. 20, 2018 (GLOBE NEWSWIRE) — CRISPR Therapeutics (Nasdaq:CRSP), a biopharmaceutical company focused on developing transformative gene-based medicines for serious diseases, today announced the pricing of an underwritten public offering of 4,210,526 common shares at a public offering price of \$47.50 per share, before underwriting discounts. In addition, underwriters have a 30-day option to purchase up to an additional 631,578 common shares at the public offering price less the underwriting discount. CRISPR Therapeutics anticipates its gross proceeds from the offering, before deducting the underwriter discounts and commissions and other offering expenses, to be approximately \$200 million, excluding any exercise of the underwriters' option to purchase additional shares. The offering is expected to close on or about September 25, 2018, subject to customary closing conditions.

Goldman Sachs & Co. LLC, Piper Jaffray & Co., Barclays Capital Inc. and Wells Fargo Securities, LLC are acting as joint book-running managers for the offering. Guggenheim Securities, LLC and Needham & Company, LLC are acting as co-managers for the offering.

An automatic shelf registration statement on Form S-3ASR (File No. 333-227427) relating to these securities has been filed with the Securities and Exchange Commission (SEC) and has become effective. This press release shall not constitute an offer to sell or a solicitation of an offer to buy, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

A preliminary prospectus supplement relating to and describing the terms of the offering was filed with the SEC on September 19, 2018. The final prospectus supplement, relating to the offering will be filed with the SEC and will be available on the SEC's website at [www.sec.gov](http://www.sec.gov). A copy of the final prospectus supplement may be obtained, when available, from Goldman Sachs & Co. LLC by mail at 200 West Street, New York, NY 10282, Attention: Prospectus Department, by telephone at (866) 471-2526, or by email at [prospectus-ny@ny.email.gs.com](mailto:prospectus-ny@ny.email.gs.com); from Piper Jaffray & Co., Attn: Prospectus Department, 800 Nicollet Mall, J12S03, Minneapolis, MN 55402, by telephone at (800) 747-3924, or by email at [prospectus@pjc.com](mailto:prospectus@pjc.com); or Barclays Capital Inc., c/o Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, NY 11717, by telephone at (888) 603-5847 or by email at [Barclaysprospectus@broadridge.com](mailto:Barclaysprospectus@broadridge.com); or from Wells Fargo Securities, LLC, Attn: Equity Syndicate Department, 375 Park Avenue, New York, New York 10152, or by email at [cmclientsupport@wellsfargo.com](mailto:cmclientsupport@wellsfargo.com), or by telephone at (800) 326-5897.

### About CRISPR Therapeutics

CRISPR Therapeutics is a leading gene-editing company focused on developing transformative gene-based medicines for serious diseases using its proprietary CRISPR/Cas9 gene-editing platform. CRISPR Therapeutics AG is headquartered in Zug, Switzerland, with its wholly-owned U.S. subsidiary, CRISPR Therapeutics, Inc., and R&D operations based in Cambridge, Massachusetts.

## Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, statements regarding CRISPR Therapeutics' anticipated public offering. The words "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "estimate," "predict," "project," "potential," "continue," "target" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Any forward-looking statements in this press release, such as the expected closing date, are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this press release, including, without limitation, uncertainties related to market conditions and the satisfaction of customary closing conditions related to the offering. These and other risks and uncertainties are described in greater detail in the section entitled "Risk Factors" in CRISPR Therapeutics' Annual Report on Form 10-K for the year ended December 31, 2017, as filed with the SEC on March 8, 2018, the prospectus supplement related to the public offering and other filings that CRISPR Therapeutics may make with the SEC in the future. Any forward-looking statements contained in this press release represent CRISPR Therapeutics' views only as of the date hereof and should not be relied upon as representing its views as of any subsequent date. CRISPR Therapeutics explicitly disclaims any obligation to update any forward-looking statements.

### CRISPR Investor Contact:

Susan Kim

617-307-7503

susan.kim@crisprtx.com

### CRISPR Media Contact:

Jennifer Paganelli

WCG on behalf of CRISPR

347-658-8290

jpaganelli@wcgworld.com