EX-10.4 8 d183927dex104.htm EX-10.4

SPECIFIC TERMS IN THIS EXHIBIT HAVE BEEN REDACTED BECAUSE CONFIDENTIAL TREATMENT FOR THOSE TERMS HAS BEEN REQUESTED. THESE REDACTED TERMS HAVE BEEN MARKED IN THIS EXHIBIT WITH THREE ASTERISKS [***]. AN UNREDACTED VERSION OF THIS EXHIBIT HAS BEEN SEPARATELY FILED WITH THE SECURITIES AND EXCHANGE COMMISSION.

Exhibit 10.4

STRATEGIC COLLABORATION, OPTION AND LICENSE AGREEMENT

BETWEEN

VERTEX PHARMACEUTICALS INCORPORATED

VERTEX PHARMACEUTICALS (EUROPE) LIMITED

AND

CRISPR THERAPEUTICS AG

CRISPR THERAPEUTICS LIMITED

CRISPR THERAPEUTICS, INC.

TRACR HEMATOLOGY LTD.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

STRATEGIC COLLABORATION, OPTION AND LICENSE AGREEMENT

This **STRATEGIC COLLABORATION, OPTION AND LICENSE AGREEMENT** (this "**Agreement**") is entered into as of October 26, 2015 (the "**Effective Date**") by and between, on the one hand, VERTEX PHARMACEUTICALS INCORPORATED, a corporation organized and existing under the laws of The Commonwealth of Massachusetts ("**Vertex Parent**"), and VERTEX PHARMACEUTICALS (EUROPE) LIMITED, a private limited liability company organized under the laws of England and Wales ("**Vertex UK**" and, together with Vertex Parent, "**Vertex**") and, on the other hand, CRISPR THERAPEUTICS AG, a corporation organized under the laws of Switzerland ("**CRISPR AG**"), CRISPR THERAPEUTICS, INC., a corporation organized under the laws of the state of Delaware ("**CRISPR Inc.**"), CRISPR THERAPEUTICS LIMITED, a corporation organized under the laws of England and Wales ("**CRISPR UK**") and TRACR HEMATOLOGY LTD, a UK limited company ("**Tracr**" and together with CRISPR AG, CRISPR Inc. and CRISPR UK "**CRISPR**"). Vertex and CRISPR each may be referred to herein individually as a "**Party**" or collectively as the "**Parties.**"

RECITALS

WHEREAS, CRISPR possesses certain Patents, Know-How, technology and expertise with respect to the CRISPR/Cas System (as defined below);

WHEREAS, Vertex possesses expertise in developing and commercializing human therapeutics;

WHEREAS, Vertex and CRISPR desire to enter into a strategic collaboration focused on exploring potential targets related to certain diseases and creating therapeutics using gene editing [***], including the CRISPR/Cas System, to treat such diseases; and

WHEREAS, simultaneously with the execution of this Agreement, the Parties are entering into a convertible debt instrument, pursuant to which Vertex will provide CRISPR AG with a total of $30,000,000 in funding, which funding will be converted into shares of CRISPR AG's preferred stock in accordance with the terms thereof;

NOW, THEREFORE, in consideration of the respective covenants, representations, warranties and agreements set forth herein, the Parties hereto agree as follows:

ARTICLE 1
DEFINITIONS

For purposes of this Agreement, the following capitalized terms will have the following meanings:

1.1 "**Acceptance**" means, with respect to an Approval Application filed for a Product, (a) in the United States, the receipt of written notice from the FDA that such Approval Application is officially "*filed*" or (b) in the European Union, the receipt of written notice of acceptance by the EMA of such Approval Application for filing under the centralized European

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

procedure in accordance with any feedback received from EU Regulatory Authorities; *provided* that if the centralized filing procedure is not used, then Acceptance will be determined upon the acceptance of such Approval Application by the applicable Regulatory Authority in a Major Market Country in the EU.

1.2 "**Additional Research**" has the meaning set forth in Section 2.12.

1.3 "**Additional Research Budget**" has the meaning set forth in Section 2.12.

1.4 "**Additional Research Plan**" has the meaning set forth in Section 2.12.

1.5 "**Adverse Event**" has the meaning set forth in the Applicable Law for such term (or comparable term), and will generally mean any untoward medical occurrence in a subject in any Clinical Trial who has received a Licensed Agent or Product, medical device or placebo, and which does not necessarily have a causal relationship with such Licensed Agent, Product, medical device or placebo, including any unfavorable and unintended sign (including an abnormal laboratory finding), symptom or disease temporally associated with the use of the applicable Licensed Agent or Product, whether or not related to such Licensed Agent or Product.

1.6 "**Affiliate**" means, as of any point in time and for so long as such relationship continues to exist with respect to any Person, any other Person that controls, is controlled by or is under common control with such Person. A Person will be regarded as in control of another Person if it (a) owns or controls more than 50% of the equity securities of the subject Person entitled to vote in the election of directors (or, in the case of a Person that is not a corporation, for the election of the corresponding managing authority); *provided*, *however*, that the term "Affiliate" will not include subsidiaries or other entities in which a Person owns a majority of the ordinary voting power necessary to elect a majority of the board of directors or other governing board, but is restricted from electing such majority by contract or otherwise, until such time as such restrictions are no longer in effect, or (b) possesses, directly or indirectly, the power to direct or cause the direction of the management or policies of an such Person (whether through ownership of securities or other ownership interests, by contract or otherwise).

1.7 "**Agreement**" has the meaning set forth in the Preamble.

1.8 "**Agreement Term**" means the period commencing on the Effective Date and ending on the expiration of this Agreement pursuant to Section 11.1, unless terminated earlier as provided herein.

1.9 "**Alliance Manager**" has the meaning set forth in Section 3.4.1.

1.10 "**Applicable Law**" means all applicable laws, statutes, rules, regulations and other pronouncements having the effect of law of any federal, national, multinational, state, provincial, county, city or other political subdivision, agency or other body, domestic or foreign, including any applicable rules, regulations, guidelines, or other requirements of the Regulatory Authorities that may be in effect from time to time.

1.11 "**Approval Application**" means a BLA, NDA or similar application or submission for a Product filed with a Regulatory Authority in a country or group of countries to obtain marketing approval for a biological or pharmaceutical product in that country or group of countries.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.12 "**Audited Party**" has the meaning set forth in Section 7.9.

1.13 "**Auditing Party**" has the meaning set forth in Section 7.9.

1.14 "**Available**" has the meaning set forth in Section 1.34.

1.15 "**BLA**" means a Biological License Application that is submitted to the FDA for marketing approval for a Licensed Agent or Product pursuant to 21 C.F.R. § 601.2.

1.16 [***].

1.17 [***].

1.18 "**Breaching Party**" means the Party that is believed by the other Party to be in material breach of this Agreement.

1.19 "**Business Day**" means a Monday, Tuesday, Wednesday, Thursday or Friday that is not a day on which banking institutions in Boston, Massachusetts are authorized or obligated to close.

1.20 "**Calendar Quarter**" means the respective periods of three consecutive calendar months ending on March 31, June 30, September 30 or December 31, during the Agreement Term, or the applicable part thereof during the first or last calendar quarter of the Agreement Term.

1.21 "**Calendar Year**" means any calendar year ending on December 31, or the applicable part thereof during the first or last year of the Agreement Term.

1.22 "**cGMP**" means current Good Manufacturing Practices as specified in the United States Code of Federal Regulations, ICH Guideline Q7A, or equivalent laws, rules, or regulations of an applicable Regulatory Authority at the time of manufacture.

1.23 "**Change of Control**" means, with respect to a Party, (a) a merger or consolidation of such Party with a Third Party that results in the voting securities of such Party outstanding immediately prior thereto, or any securities into which such voting securities have been converted or exchanged, ceasing to represent more than 50% of the combined voting power of the surviving entity or the parent of the surviving entity immediately after such merger or consolidation, or (b) a transaction or series of related transactions in which a Third Party, together with its Affiliates, becomes the beneficial owner of more than 50% of the combined voting power of the outstanding securities of such Party, or (c) the sale or other transfer to a Third Party of all or substantially all of such Party's business to which the subject matter of this Agreement relates. Notwithstanding the foregoing, with respect to CRISPR, the term "Change of Control" will not include any sale of shares of capital stock of CRISPR, in a single transaction or series of related transactions in which CRISPR issues new securities solely to institutional investors for cash or the cancellation or conversion of indebtedness or a combination thereof where such transaction(s) are conducted primarily for bona fide equity financing purposes.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.24 "**Clinical Trial**" means a study in humans that is conducted in accordance with GCP and is designed to generate data in support of an Approval Application.

1.25 "**Collaboration Program**" means, on a Collaboration Target-by-Collaboration Target basis, a Research program dedicated to the design, optimization and Research of Licensed Agents and Products directed to such Collaboration Target pursuant to a Research Plan and, upon Vertex's exercise of the Option for a Collaboration Target, Vertex's (or with respect to any Hemoglobinopathy Target [***], the Parties') Research, Development, Manufacture and Commercialization of such Licensed Agents and Products.

1.26 "**Collaboration Program Working Group**" has the meaning set forth in Section 3.2.

1.27 "**Collaboration Target**" means a Vertex Target that Vertex has selected as the subject of a Research Plan in accordance with Section 2.3.3.

1.28 "**Combination Product**" has the meaning set forth in Section 1.117.

1.29 "**Commercialize**" or "**Commercializing**" means to market, promote, distribute, offer for sale, sell, have sold, import, export or otherwise commercialize a product, to conduct activities, other than Research, Development and Manufacturing, in preparation for the foregoing activities, including obtaining Price Approval, and to conduct post-Marketing Approval studies (including Clinical Trials). When used as a noun, "**Commercialization**" means any and all activities involved in Commercializing.

1.30 "**Commercially Reasonable Efforts**" means with respect to the efforts to be expended by any Person, with respect to any objective, reasonable, diligent and good faith efforts to accomplish such objective. With respect to any objective relating to the Research, Development or Commercialization of a Licensed Agent or Product, "Commercially Reasonable Efforts" means [***], taking into account, without limitation, with respect to each Licensed Agent or Product, (a) [***], (b) [***], (c) [***], (d) [***], (e) [***], (f) [***], (g) [***], (h) [***], (i) [***] and (j) [***]. "Commercially Reasonable Efforts" shall be [***].

1.31 "**Competitive Infringement**" has the meaning set forth in Section 8.6.1.

1.32 "**Competitive Program**" has the meaning set forth in Section 1.33.

1.33 "**Competitor**" means any pharmaceutical company that is conducting a research, development or commercial program for a product that is intended to (a) [***], (b) [***] or (c) [***] (each of (a) - (c), a "**Competitive Program**").

1.34 "**Confidential Information**" means, with respect to each Party, all Know-How or other information, including proprietary information (whether or not patentable) regarding or embodying such Party's technology, products, business information or objectives, that is communicated in any way or form by or on behalf of the Disclosing Party to the Receiving Party

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

or its permitted recipients, prior to, on or after the Effective Date, whether or not such Know-How or other information is identified as confidential at the time of disclosure. The terms and conditions of this Agreement will be considered Confidential Information of both Parties, with both Parties deemed to be the Receiving Party of such Confidential Information. The Vertex Target List and the identity of the Collaboration Targets hereunder will be the Confidential Information of both Parties; provided, that if Vertex exercises the Option for a Collaboration Target, the identity of such Collaboration Target will be Vertex's Confidential Information and will no longer be CRISPR's Confidential Information; and provided, further, [***] Notwithstanding any provision of this Section 1.34 to the contrary, Confidential Information does not include any Know-How or information that: (a) was already known by the Receiving Party (other than under an obligation of confidentiality to the Disclosing Party) at the time of disclosure by or on behalf of the Disclosing Party; (b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the Receiving Party; (c) became generally available to the public or otherwise part of the public domain after its disclosure to the Receiving Party, other than through any act or omission of the Receiving Party in breach of its obligations under this Agreement; (d) was disclosed to the Receiving Party, other than under an obligation of confidentiality, by a Third Party who had no obligation to the Disclosing Party not to disclose such information to the Receiving Party; or (e) was independently discovered or developed by or on behalf of the Receiving Party without the use of any Confidential Information belonging to the Disclosing Party; *provided*, in connection with the foregoing exclusions from protection, that specific Confidential Information shall not be deemed to be known, generally available, in the public domain, disclosed, independently discovered or developed (individually and collectively "**Available**"), merely because broader or related information is Available, nor shall combinations of elements or principles be considered to be Available merely because individual elements thereof are Available.

1.35 "**Continuation Notice**" has the meaning set forth in Section 2.6.

1.36 "**Continuation Research**" has the meaning set forth in Section 2.6.

1.37 "**Control**" or "**Controlled**" means with respect to any Know-How or Patent or other data, information or Materials, possession of the ability by a Party or its Affiliate(s) (whether by sole or joint ownership, license or otherwise, other than pursuant to this Agreement) to grant, without violating the terms of any agreement with a Third Party, a license, access or other right in, to or under such Know-How or Patent or other data, information or Materials. Notwithstanding anything in this Agreement to the contrary, a Party will be deemed to not Control any Patents or Know-How that are owned or controlled by a Third Party described in the definition of "Change of Control," or such Third Party's Affiliates (other than an Affiliate of such Party prior to the Change of Control), (a) prior to the closing of such Change of Control, except to the extent that any such Patents or Know-How were developed prior to such Change of Control through the use of such Party's technology, or (b) after such Change of Control to the extent that such Patents or Know-How are developed or conceived by such Third Party or its Affiliates (other than such Party) after such Change of Control without using or incorporating such Party's technology.

1.38 "**Cost Report**" has the meaning set forth in Section 7.4.2.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.39 "**Cover**," "**Covering**" or "**Covers**" means, as to a product and Patent, that, in the absence of a license granted under, or ownership of, such Patent, the making, using, keeping, selling, offering for sale or importation of such product would infringe such Patent or, as to a pending claim included in such Patent, the making, using, selling, offering for sale or importation of such product would infringe such Patent if such pending claim were to issue in an issued patent without modification.

1.40 "**CREATE Act**" means the Cooperative Research and Technology Enhancement Act of 2004, 35 U.S.C. § 103(c)(2)-(c)(3).

1.41 "**CRISPR**" has the meaning set forth in the Preamble.

1.42 "**CRISPR Activities**" means any and all Research activities other than Vertex Activities under any Research Plan.

1.43 "**CRISPR Agreement Breach**" has the meaning set forth in Section 11.2.3(a).

1.44 "**CRISPR Background Know-How**" means any Know-How, other than Joint Program Know-How and CRISPR Program Know-How, that (a) [***] and (b) [***]. On a Collaboration Target-by-Collaboration Target basis, CRISPR Background Know-How will exclude [***]. For the avoidance of doubt, the CRISPR Background Know-How includes the Know-How claimed or disclosed in the CRISPR Platform Technology Patents.

1.45 "**CRISPR Background Patents**" means any Patent, other than a Joint Program Patent, CRISPR Program Patent or CRISPR Platform Technology Patent that (a) [***] and (b) [***]. On a Collaboration Target-by-Collaboration Target basis, CRISPR Background Patents will exclude [***].

1.46 "**CRISPR Breach Event**" has the meaning set forth in Section 11.2.3(a).

1.47 "**CRISPR Entity**" means, when used in the singular, any one of CRISPR UK, CRISPR AG, CRISPR Inc. or Tracr. "**CRISPR Entities**" means, when used in the plural, CRISPR UK, CRISPR AG, CRISPR Inc. and Tracr.

1.48 "**CRISPR Indemnified Party**" has the meaning set forth in Section 10.1.

1.49 "**CRISPR In-License Agreements**" has the meaning set forth in Section 7.6.1.

1.50 "**CRISPR Platform Technology Patents**" means all Patents that are owned, used, developed by, or licensed to CRISPR or its Affiliates, in each case to the extent Controlled by CRISPR or its Affiliates on the Effective Date or at any time during the Agreement Term, claiming [***]. For clarity, the CRISPR Platform Technology Patents (i) will not include [***] and (ii) will include all [***].

1.51 "**[***] Patent**" has the meaning set forth in Section 8.1.3(a).

1.52 "**CRISPR Program Breach**" has the meaning set forth in Section 11.2.3(a).

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.53 "**CRISPR Program Know-How**" has the meaning set forth in Section 8.1.2(a).

1.54 "**CRISPR Program Patents**" has the meaning set forth in Section 8.1.2(a).

1.55 "**CRISPR Program Technology**" has the meaning set forth in Section 8.1.2(a).

1.56 "**CRISPR Reserved Target**" means all Targets described or identified on Schedule A.

1.57 "**CRISPR/Cas System**" means a clustered regularly interspaced short palindromic repeats (CRISPR)/CRISPR-associated (Cas) protein system that comprises (a) [***] and (b) [***].

1.58 "**Development**" means, with respect to a Licensed Agent, all clinical and non-clinical research and development activities conducted after filing of an IND for such Licensed Agent, including toxicology, pharmacology test method development and stability testing, process development, formulation development, delivery system development, quality assurance and quality control development, statistical analysis, Clinical Trials (other than post-Marketing Approval Clinical Trials), regulatory affairs, pharmacovigilance, Clinical Trial regulatory activities and obtaining and maintaining Regulatory Approval. When used as a verb, "**Develop**" or "**Developing**" means to engage in Development.

1.59 "**Disclosing Party**" has the meaning set forth in Section 12.1.

1.60 "**Distracting Product**" means a product containing (a) [***] or (b) [***].

1.61 "**Distributor**" means a Third Party to whom Vertex grants a right to sell or distribute a Product, that does not make payments to Vertex that are calculated on the basis of a percentage of, or profit share on, such Third Party's sales of Products.

1.62 "**Divestiture**" means, with respect to a Distracting Product, the sale, exclusive license or other transfer by the applicable Party and its Affiliates of all of their development and commercialization rights with respect to such Distracting Product to a Third Party without the retention or reservation of any development or commercialization obligation, interest or participation rights (other than solely an economic interest or the right to enforce customary terms and conditions contained in the relevant agreements effectuating such transaction). When used as a verb, "**Divest**" means the to engage in a Divestiture.

1.63 "**DOJ**" has the meaning set forth in Section 4.1.2(a).

1.64 "**Effective Date**" has the meaning set forth in the Preamble.

1.65 "**EMA**" means the European Medicines Agency and any successor entity thereto.

1.66 "**Establishment of POC**" with respect to a Product, [***] that [***] (a) [***] and (b) [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.67 "**European Commission**" means the European Commission or any successor entity that is responsible for granting marketing approvals authorizing the sale of pharmaceuticals in the European Union.

1.68 "**European Union**" or "**EU**" means each and every country or territory that is officially part of the European Union.

1.69 "**Exclusive License**" has the meaning set forth in Section 5.3.1.

1.70 "**Executive Officers**" means the Chief Scientific Officer of CRISPR AG, initially Sven Ante (Bill) Lundberg, and the Chief Scientific Officer of Vertex, initially David Altshuler; *provided*, that for purposes of Section 11.3.4(a), "Executive Officers" means the Chief Executive Officer of CRISPR AG, initially Rodger Novak, and the Chief Financial Officer of Vertex, initially Ian Smith.

1.71 "**FDA**" means the United States Food and Drug Administration and any successor entity thereto.

1.72 "**FD&C Act**" means the United States Federal Food, Drug, and Cosmetic Act, as amended, and the rules and regulations promulgated thereunder.

1.73 "**Field**" means the diagnosis, treatment or prevention of disease in humans or animals in [***].

1.74 "**Final Target Selection Period**" means the [***] period following the Initial Target Selection Period.

1.75 "**First Commercial Sale**" means with respect to a Product, the first sale of such Product by Vertex, its Affiliate or its Sublicensee to a Third Party resulting in Net Sales in a particular country after any required Marketing Approval for the Product has been obtained in such country.

1.76 "**Force Majeure**" means a condition, the occurrence and continuation of which is beyond the reasonable control of a Party, including an act of God, voluntary or involuntary compliance with any regulation, law or order of any government, war, civil commotion, labor strike or lock-out, epidemic, flood, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm or like catastrophe.

1.77 "**Foundational Intellectual Property Rights**" means all rights, title and interest in [***]; and any worldwide patents and patent applications claiming priority thereto and all inventions covered or claimed by such patent applications (together with all provisionals, non-provisionals, substitutions, continuations, continuations-in-part, divisionals, renewals and all patents granted thereon, and all reissues, reexaminations, extensions, confirmations, revalidations, registrations and patents of addition thereof, including patent term extensions and supplementary protection certificates, international patent applications filed under the Patent Cooperation Treaty (PCT) and any foreign equivalents to any of the foregoing).

1.78 "**FTC**" has the meaning set forth in Section 4.1.2(a).

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.79 "**FTE Rate**" means, [***]; *provided* that such rates will increase or decrease on [***] over the twelve month period preceding each such January 1.

1.80 "**GAAP**" means United States generally accepted accounting principles, consistently applied.

1.81 "**GCP**" means good clinical practices, which are the then-current standards for Clinical Trials for pharmaceuticals, as set forth in the FD&C Act or other Applicable Law, and such standards of good clinical practice as are required by the Regulatory Authorities of the European Union and other organizations and governmental authorities in countries for which the applicable Licensed Agent is intended to be Developed, to the extent such standards are not less stringent than United States standards.

1.82 "**[***] Joint Program Know-How**" has the meaning set forth in Section 8.1.2(d).

1.83 "**[***] Joint Program Patents**" has the meaning set forth in Section 8.1.2(d).

1.84 "**[***] Joint Program Technology**" has the meaning set forth in Section 8.1.2(d).

1.85 "**[***]**" means [***], including, but not limited to, [***], and any variation thereof, in each case [***]

1.86 "**Generic Product**" means, with respect to a particular Product in a particular country, a product on the market in such country commercialized by any Third Party that is not a Sublicensee and that did not purchase such product in a chain of distribution that included any of Vertex or its Affiliates or Sublicensees, that (a) is approved by the applicable Regulatory Authority, under any then-existing laws and regulations in the applicable country pertaining to approval of generic or biosimilar biologic products, as a "generic" or "biosimilar" version of such Product, which approval uses such Product as a reference product and relies on or references pivotal safety or efficacy data in the Approval Application for such Product or (b) otherwise meets the criteria for constituting a "biosimilar" or "interchangeable" product pursuant to Section 351(k) of the Public Health Service Act (42 U.S.C. § 262(k)) or EMA Directive 2001/83/EC or any foreign equivalent thereof or successors thereto.

1.87 "**GLP**" means the then-current good laboratory practice standards promulgated or endorsed by the FDA as defined in 21 C.F.R. Part 58 or the successor thereto, or comparable regulatory standards in jurisdictions outside of the United States, to the extent such standards are not less stringent than United States standards.

1.88 "**Governmental Authority**" means any court, agency, department, authority or other instrumentality of any national, state, county, city or other political subdivision.

1.89 "**Hemoglobinopathy Target**" means a Target related to the [***].

1.90 "**HSR Act**" means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules and regulations promulgated thereunder.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.91 "**HSR Clearance Date**" means the earliest date on which the Parties have actual knowledge that all applicable waiting periods under the HSR Act with respect to the transactions contemplated hereunder have expired or have been terminated.

1.92 "**HSR Filing**" means a filing by Vertex and CRISPR with the FTC and the DOJ of a Notification and Report Form for Certain Mergers and Acquisitions (as that term is defined in the HSR Act) with respect to the matters set forth in this Agreement, together with all required documentary attachments thereto.

1.93 "**IND**" means any Investigational New Drug application, filed with the FDA pursuant to Part 312 of Title 21 of the U.S. Code of Federal Regulations, including any supplements or amendments thereto. References herein to IND will include, to the extent applicable, any comparable filings outside the United States.

1.94 "**Indemnified Party**" has the meaning set forth in Section 10.3.

1.95 "**Indemnifying Party**" has the meaning set forth in Section 10.3.

1.96 "**Initial Collaboration Targets**" means the Targets set forth on Schedule B under the heading "Initial Collaboration Targets."

1.97 "**Initial Target Selection Period**" means the first [***] of the Research Term.

1.98 "**Initiation**" or "**Initiate**" means, with respect to any Clinical Trial, dosing of the first human subject in such Clinical Trial.

1.99 "**Insolvency Event**" has the meaning set forth in Section 11.2.5.

1.100 "**Joint Development & Commercialization Agreement**" has the meaning set forth in Section 6.1.2(c).

1.101 "**Joint Program Know-How**" means [***] Joint Program Know-How, [***] Joint Program Know-How and Other Joint Program Know-How.

1.102 "**Joint Program Patents**" means [***] Joint Program Patents, [***] Joint Program Patents and Other Joint Program Patents.

1.103 "**Joint Program Technology**" means [***] Joint Program Technology, [***] Joint Program Technology and Other Joint Program Technology.

1.104 "**Joint Research Committee**" or "**JRC**" has the meaning set forth in Section 3.1.1.

1.105 "**Know-How**" means intellectual property, data, results, pre-clinical and clinical protocols and data from studies and Clinical Trials, chemical structures, chemical sequences, information, inventions, know-how, formulas, trade secrets, techniques, methods, processes, procedures and developments, whether or not patentable; *provided* that Know-How does not include Patents claiming any of the foregoing.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.106 "**Knowledge**" means [***] of [***] after [***].

1.107 "**Liability**" has the meaning set forth in Section 10.1.

1.108 "**Licensed Agent**" means a product comprising (a) [***], where such [***], or any portion thereof is [***] or (b) [***] by such [***].

1.109 "**Licensed Know-How**" means (a) CRISPR Background Know-How, (b) CRISPR Program Know-How and (c) CRISPR's interest in the Joint Program Know-How.

1.110 "**Licensed Patents**" means (a) CRISPR Background Patents, (b) CRISPR Platform Technology Patents, (c) CRISPR Program Patents, (d) [***] Patents (until [***]) and (e) CRISPR's interest in the Joint Program Patents.

1.111 "**Licensed Technology**" means, subject to Section 5.3.2 and Section 7.6.6, any and all Licensed Patents and Licensed Know-How.

1.112 "**Major Market Country**" means any one of the following countries: [***].

1.113 "**Manufacture**" or "**Manufactured**" or "**Manufacturing**" means activities directed to making, having made, producing, manufacturing, processing, filling, finishing, packaging, labeling, quality control testing and quality assurance release, shipping or storage of a product.

1.114 "**Marketing Approval**" means, with respect to a Product in a particular jurisdiction, all approvals, licenses, registrations or authorizations necessary for the Commercialization of such Product in such jurisdiction, including, with respect to the United States, approval of an Approval Application for such Product by the FDA and with respect to the European Union, approval of an Approval Application for such Product by the European Commission.

1.115 "**Materials**" means all biological materials or chemical compounds arising out of a Party's activities under this Agreement or otherwise provided by a Party for use by the other Party to conduct activities pursuant to this Agreement, including Licensed Agents, Clinical Trial samples, cell lines, assays, viruses and vectors.

1.116 "**NDA**" means a new drug application that is submitted to the FDA for marketing approval for a Licensed Agent or Product, pursuant to 21 C.F.R. § 314.3.

1.117 "**Net Sales**" means the gross invoiced price for Products sold by Vertex, its Affiliates or Sublicensees (the "**Selling Party**") to Third Parties, less the following deductions from such gross amounts:

(a) credits or allowances, if any are actually allowed, on account of price adjustments, recalls, claims, damaged goods, rejections or returns of items previously sold (including product returned in connection with recalls or withdrawals) and amounts written off by reason of uncollectible debt, provided that if the debt is thereafter paid, the corresponding amount shall be added to the Net Sales for the period during which it is paid;

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(b) import taxes, export taxes, excise taxes (including annual fees due under Section 9008 of the United States Patient Protection and Affordable Care Act of 2010 (Pub. L. No. 111-48)), sales taxes, value-added taxes, consumption taxes, duties or other taxes levied on, absorbed, determined or imposed with respect to such sales (excluding income or net profit taxes or franchise taxes of any kind), to the extent not reimbursed by a non-related party;

(c) insurance, customs charges, freight, shipping and other transportation costs incurred in shipping product to such non-related parties, to the extent incurred by a Selling Party and not reimbursed by a non-related party;

(d) reasonable discounts (including trade, quantity and cash discounts) actually allowed, cash and non-cash coupons, retroactive price reductions, and charge back payments and rebates granted to any non-related party (including to governmental entities or agencies, purchasers, reimbursers, customers, Distributors, wholesalers, and group purchasing organizations and managed care organizations (and other similar entities and institutions)); and

(e) rebates (or their equivalent), administrative fees, chargebacks and retroactive price adjustments and any other similar allowances granted to non-related Parties (including to Governmental Authorities, purchasers, reimbursers, customers, Distributors, wholesalers, and managed care organizations (and other similar entities and institutions)) which effectively reduce the gross invoiced sales price of the Product.

Generally, only items that are deducted from the Selling Party's gross invoiced sales price of Product(s), as included in the Selling Party's published financial statements and that are in accordance with GAAP, applied on a consistent basis, will be deducted from such gross invoiced sales price for purposes of the calculation of Net Sales. However, compulsory payments required by federal or state governments based upon sales volume or market share of Products (but for clarity excluding taxes on the Selling Party's net income), to the extent borne by the Selling Party, will be deducted from "Net Sales" regardless of its classification in the Selling Party's published financial statements; *provided* that any such deduction will be limited to that share of such compulsory payment proportional to the share of the total sales volume or market share of the Selling Party used to compute the compulsory payment represented by applicable Net Sales of Products.

A qualifying amount may be deducted only once regardless of the number of the preceding categories that describe such amount. If a Selling Party makes any adjustment to such deductions after the associated Net Sales have been reported pursuant to this Agreement, the adjustments and payment of any royalties due will be reported with the next quarterly report. Sales between or among Vertex, its Affiliates and Sublicensees will be excluded from the computation of Net Sales if such sales are not intended for end use, but Net Sales will include the subsequent final sales to Third Parties by Vertex or any such Affiliates or Sublicensees. A Product will not be deemed to be sold if the Product is provided free of charge to a Third Party in reasonable quantities as a sample consistent with industry standard promotional and sample practices. For clarity, [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

If a sale, transfer or other disposition with respect to Products involves consideration other than cash or is not at arm's length, then the Net Sales from such sale, transfer or other disposition will be calculated on the [***].

Solely for purposes of calculating Net Sales, if Vertex or its Affiliates or any permitted Sublicensee sells a Product in the form of a combination product containing a Licensed Agent and one or more other therapeutically or prophylactically active ingredients or delivery devices (whether combined in a single formulation or package, as applicable, or formulated separately but packaged under a single label approved by a Regulatory Authority and sold together for a single price) (a "**Combination Product**"), Net Sales of such Combination Product for the purpose of determining the payments due to CRISPR pursuant to this Agreement will be calculated by multiplying actual Net Sales of such Combination Product as determined in the first paragraph of the definition of "Net Sales" by the fraction A/(A+B) where [***]. The weighted average invoice prices referenced above will be calculated with reference to the prevailing prices during the applicable Calendar Quarter in those top selling countries that equate to [***] of Net Sales of the applicable Product in the Territory, with the prices weighted in the calculation to reflect the actual relative sales value of the Product in each of the countries to which the calculation relates. If it is not possible to determine the fraction A/(A+B) based on the criteria specified in the preceding sentence (*e.g.*, if a Product component is not sold separately), the Parties shall determine Net Sales for the Product in such Combination Product in good faith by mutual agreement [***].

1.118 "**[***]**" has the meaning set forth in Section 7.6.2(a).

1.119 "**Non-Breaching Party**" means the Party that believes the other Party is in material breach of this Agreement.

1.120 "**Non-Disclosing Party**" has the meaning set forth in Section 12.5.3.

1.121 "**Option**" has the meaning set forth in Section 4.1.1.

1.122 "**Option Cap**" has the meaning set forth in Section 4.1.1.

1.123 "**Option Deadline**" has the meaning set forth in Section 4.1.1.

1.124 "**Option Exercise**" means, with respect to a Collaboration Target, Vertex's exercise of an Option as provided in Section 4.1.1; *provided*, that if Vertex notifies CRISPR that an HSR Filing is required as provided, in Section 4.1.1, Option Exercise will not occur until the HSR Clearance Date.

1.125 "**Option Exercise Data Package**" means, with respect to a Collaboration Program, a data package containing the information set forth on Schedule C.

1.126 "**Other Joint Program Know-How**" has the meaning set forth in Section 8.1.2(e).

1.127 "**Other Joint Program Patents**" has the meaning set forth in Section 8.1.2(e).

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.128 "**Other Joint Program Technology**" has the meaning set forth in Section 8.1.2(e).

1.129 "**Out-of-Pocket Costs**" means, with respect to a Party, costs and expenses paid by such Party to Third Parties (or payable to Third Parties and accrued in accordance with GAAP), other than Affiliates or employees of such Party.

1.130 "**Party**" or "**Parties**" has the meaning set forth in the Preamble.

1.131 "**Patent Coordinator**" has the meaning set forth in Section 8.3.

1.132 "**Patent Costs**" means the reasonable fees and expenses paid to outside legal counsel, and filing, maintenance, disbursement and other reasonable Out-of-Pocket Costs paid to Third Parties, in connection with the Prosecution and Maintenance of Patents.

1.133 "**Patents**" means the rights and interests in and to issued patents and pending patent applications in any country, jurisdiction or region (including inventor's certificates and utility models), including all provisionals, non-provisionals, substitutions, continuations, continuations-in-part, divisionals, renewals and all patents granted thereon, and all reissues, reexaminations, extensions, confirmations, revalidations, registrations and patents of addition thereof, including patent term extensions and supplementary protection certificates, international patent applications filed under the Patent Cooperation Treaty (PCT) and any foreign equivalents to any of the foregoing.

1.134 "**Person**" means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, incorporated association, joint venture or similar entity or organization, including a government or political subdivision or department or agency of a government.

1.135 "**Phase 2 Clinical Trial**" means any human Clinical Trial conducted in patients that is intended to provide preliminary evidence suggesting effectiveness of the drug, including Clinical Trials described in 21 C.F.R. §312.21(b), or, with respect to a jurisdiction other than the United States, a similar Clinical Trial.

1.136 "**Phase 3 Clinical Trial**" means, with respect to a Product, a pivotal Clinical Trial in humans performed to gain evidence with statistical significance of the efficacy of such Product in a target population, and to obtain expanded evidence of safety for such Product that is needed to evaluate the overall benefit-risk relationship of such Product, to form the basis for approval of an Approval Application by a Regulatory Authority and to provide an adequate basis for physician labeling, as described in 21 C.F.R. 312.21(c), as amended from time to time, or the corresponding regulations in jurisdictions other than the United States.

1.137 "**Price Approval**" means, in any country where a Governmental Authority authorizes reimbursement for, or approves or determines pricing for, pharmaceutical products, receipt (or, if required to make such authorization, approval or determination effective, publication) of such reimbursement authorization or pricing approval or determination.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.138 "**Proceeding**" means an action, suit or proceeding.

1.139 "**Product**" means any pharmaceutical product, medical therapy, preparation, substance, or formulation comprising or employing, in whole or in part, a Licensed Agent. All Products comprising the same Licensed Agent(s) (and no additional Licensed Agents) will be considered the same Product under this Agreement.

1.140 "**[***] Claim**" means a claim in any Patent that [***].

1.141 "**Product Development & Commercialization Plan**" has the meaning set forth in Section 6.4.

1.142 "**Prosecution and Maintenance**" or "**Prosecute and Maintain**" means, with regard to a Patent, the preparing, filing, prosecuting and maintenance of such Patent, as well as handling re-examinations and reissues with respect to such Patent, together with the conduct of interferences, the defense of oppositions and other similar proceedings with respect to the particular Patent. For clarification, "**Prosecution and Maintenance**" or "**Prosecute and Maintain**" will not include any other enforcement actions taken with respect to a Patent.

1.143 "**[***] Patent**" has the meaning set forth in Section 8.2.2.

1.144 "**Receiving Party**" has the meaning set forth in Section 12.1.

1.145 "**Regulatory Approval**" means the technical, medical and scientific licenses, registrations, authorizations and approvals (including approvals of Approval Applications, supplements and amendments, pre- and post- approvals, and labeling approvals) of any Regulatory Authority, necessary for the Research, Development, clinical testing, commercial manufacture, distribution, marketing, promotion, offer for sale, use, import, export or sale of a pharmaceutical product in a regulatory jurisdiction, including Marketing Approval.

1.146 "**Regulatory Authority**" means, with respect to a country in the Territory, any national (*e.g.*, the FDA), supra-national (e.g., the European Commission, the Council of the European Union, or the EMA), regional, state or local regulatory agency, department, bureau, commission, council or other Governmental Authority involved in the granting of Regulatory Approvals or Price Approvals for pharmaceutical products in such country or countries.

1.147 "**Regulatory Filings**" means, collectively: (a) all INDs, Approval Applications, establishment license applications, Drug Master Files, applications for designation as an "**Orphan Licensed Product(s)**" under the Orphan Drug Act, for "**Fast Track**" status under Section 506 of the FD&C Act (21 U.S.C. § 356) or for a Special Protocol Assessment under Section 505(b)(4)(B) and (C) of the FD&C Act (21 U.S.C. § 355(b)(4)(B)) and all other similar filings (including counterparts of any of the foregoing in any country or region in the Territory); (b) any applications for Regulatory Approval or Price Approval and other applications, filings, dossiers or similar documents submitted to a Regulatory Authority in any country for the purpose of obtaining Regulatory Approval or Price Approval from that Regulatory Authority; (c) all supplements and amendments to any of the foregoing; and (d) any correspondence with Regulatory Authorities in connection with any of the foregoing.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.148 "**Research**" means conducting research activities to discover and advance Licensed Agents and Products, including pre-clinical studies and optimization, but specifically excluding Development and Commercialization. When used as a verb, "**Researching**" means to engage in Research.

1.149 "**Research Budget**" has the meaning set forth in Section 2.2.

1.150 "**Research Costs**" means the costs and expenses that are actually incurred by or on behalf of CRISPR and specifically identifiable or specifically allocable to the Research activities conducted under a Research Plan (including Continuation Research) or an Additional Research Plan, including: (a) CRISPR's and its Affiliates fully absorbed internal costs with respect to such activities; and (b) all Out-of-Pocket Costs incurred by CRISPR or its Affiliates, including payments made to Third Parties with respect to such Research activities (except to the extent that such costs have been included in internal costs). CRISPR's fully absorbed internal costs will be determined at the [***]. All other costs will be determined from the books and records of CRISPR and its Affiliates maintained in accordance with GAAP.

1.151 "**Research Plan**" means each plan meeting the requirements set forth in Section 2.2 to design and optimize Licensed Agents and Products for a specified Target and to generate the data and information required to prepare the applicable Option Exercise Data Package.

1.152 "**Research Term**" has the meaning set forth in Section 2.4.

1.153 "**Residual Knowledge**" means knowledge, techniques, experience and Know-How that are (a) reflected in any Confidential Information owned or Controlled by the Disclosing Party and (b) retained in the unaided memory of any authorized representative of the Receiving Party after having access to such Confidential Information. A Person's memory will be considered to be unaided if the Person has not intentionally memorized the Confidential Information for the purpose of retaining and subsequently using or disclosing it. In no event, however, will Residual Knowledge include any knowledge, techniques, experience and Know-How to the extent (at any time, for such time) within the scope of any valid patent claim owned or Controlled by the Disclosing Party.

1.154 "**Royalty Term**" means, with respect to a Product in a country, the period commencing on the first sale of such Product in such country and ending upon the later of: (a) the expiration of the last Valid Claim of a Licensed Patent that Covers such Product in such country; (b) ten years after the First Commercial Sale of such Product in such country; or (c) expiration of all applicable regulatory exclusivity periods, including data exclusivity, in such country with respect to such Product.

1.155 "**Safety Data Exchange Agreement**" has the meaning set forth in Section 6.6.3.

1.156 "**Selling Party**" has the meaning set forth in Section 1.117.

1.157 "**Setoff Amount**" has the meaning set forth in Section 11.3.3.

1.158 [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.159 "**Shared Product**" has the meaning set forth in Section 6.1.2(a).

1.160 "**Subcontractor**" has the meaning set forth in Section 2.9.

1.161 "**Sublicense**" means, directly or indirectly, to sublicense, grant any other right with respect to, or agree not to assert, any licensed right under any Patent, Know-How or other intellectual property right. When used as a noun, "**Sublicense**" means any agreement to Sublicense.

1.162 "**Sublicensee**" means an Affiliate or Third Party, other than a Distributor, to whom Vertex (or a Sublicensee or Affiliate) sublicenses any of the rights granted to Vertex hereunder during the Agreement Term.

1.163 "**Substitution Cap**" has the meaning set forth in Section 2.3.2(a).

1.164 "**Target**" means a [***] the [***] of which is associated with a human disease and which is to be edited, [***] in order to treat, ameliorate or prevent such disease.

1.165 "**Target Cap**" has the meaning set forth in Section 2.3.2(a).

1.166 "**Target Selection Period**" means the Initial Target Selection Period and the Final Target Selection Period.

1.167 "**[***] Joint Program Know-How**" has the meaning set forth in Section 8.1.2(c).

1.168 "**[***] Joint Program Patents**" has the meaning set forth in Section 8.1.2(c).

1.169 "**[***] Joint Program Technology**" has the meaning set forth in Section 8.1.2(c).

1.170 "**Targeting**" means [***] a Target or the [***] thereof.

1.171 "**Territory**" means all countries of the world.

1.172 "**Third Party**" means any Person other than Vertex, CRISPR or their respective Affiliates.

1.173 "**Third Party Obligations**" means any non-financial encumbrances, obligations, restrictions, or limitations imposed by a CRISPR In-License Agreement or [***] that are required to be passed through to a sublicensee and relate to a Product or a Collaboration Target, including field or territory restrictions, covenants, diligence obligations or limitations pertaining to enforcement of intellectual property rights.

1.174 "**United States**" or "**U.S.**" means the fifty states of the United States of America and all of its territories and possessions and the District of Columbia.

1.175 "**Valid Claim**" means a claim (a) of any issued, unexpired United States or foreign Patent, which will not, in the country of issuance, have been donated to the public, disclaimed, nor held invalid or unenforceable by a court of competent jurisdiction in an unappealed or unappealable decision, or (b) of any United States or foreign patent application,

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

which will not, in the country in question, have been cancelled, withdrawn or abandoned. Notwithstanding the foregoing, on a country-by-country basis, a patent application pending for more than [***] years, or [***], will not be considered to have any Valid Claim for purposes of this Agreement unless and until a patent meeting the criteria set forth in clause (a) above with respect to such application issues.

1.176 "**Vertex**" has the meaning set forth in the Preamble.

1.177 "**Vertex Activities**" means, under any Research Plan, any and all Research activities that Vertex agrees to conduct and for which it is specifically designated as the responsible Party under the Research Plan.

1.178 "**Vertex Background Know-How**" means any Know-How, other than Joint Program Know-How and Vertex Program Know-How, that (a) Vertex or any of its Affiliates Control as of the Effective Date or that comes into the Control of Vertex or any of its Affiliates during the Agreement Term and (b) [***].

1.179 "**Vertex Background Patents**" means any Patent, other than a Joint Program Patent or Vertex Program Patent that (a) Vertex or any of its Affiliates Control as of the Effective Date or that comes into the Control of Vertex or any of its Affiliates during the Agreement Term and (b) [***].

1.180 "**Vertex Indemnified Party**" has the meaning set forth in Section 10.2.

1.181 "**Vertex Parent**" has the meaning set forth in the Preamble.

1.182 "**Vertex Program Know-How**" has the meaning set forth in Section 8.1.2(b).

1.183 "**Vertex Program Patents**" has the meaning set forth in Section 8.1.2(b).

1.184 "**Vertex Program Technology**" has the meaning set forth in Section 8.1.2(b).

1.185 "**Vertex Share**" has the meaning set forth in Section 7.6.4.

1.186 "**Vertex Target**" has the meaning set forth in Section 2.3.1.

1.187 "**Vertex Target List**" has the meaning set forth in Section 2.3.1.

1.188 "**Vertex Technology**" means (a) the Vertex Background Know-How, (b) the Vertex Background Patents, (c) the Vertex Program Technology, and (d) Vertex's interest in any Joint Program Technology.

1.189 "**Vertex UK**" has the meaning set forth in the Preamble.

ARTICLE 2
RESEARCH

2.1 Collaboration Overview. The Parties will collaborate by performing the activities set forth in each Research Plan for the purpose of designing and optimizing Licensed Agents and Products for Vertex (or with respect to the Shared Products, for the Parties) to advance through Clinical Trials and bring to patients as commercial products in the Field.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

2.2 Research Plans. During the Research Term CRISPR and Vertex will conduct Collaboration Programs, each under a separate Research Plan, focused on the design and optimization of Licensed Agents and Products for a specific Collaboration Target. The components of the initial Research Plans to be developed for the Collaboration Targets are attached hereto as Schedule D. Each Research Plan will be generally consistent with such initial Research Plans with respect to the scope and content thereof. The Collaboration Program Working Group will update each ongoing Research Plan and submit the updated Research Plans to the JRC for its review and approval on an as-needed basis, but in no event less than once every [***]. Each Research Plan will include (a) a description of the process and criteria to be used by the Parties to design and optimize Licensed Agents to be used in Products directed to the applicable Collaboration Target, (b) projected timelines for activities under the Research Plan, (c) a budget for activities under such Research Plan (each, a "**Research Budget**"), (d) decision points and associated criteria for the Research Plan, including, without limitation, pre-specified criteria for establishing the elements of the Option Exercise Data Package for the applicable Collaboration Target, (e) a description of which Party will be responsible for each activity under the Research Plan; *provided* that unless otherwise specified in the applicable Research Plan, each Party will be responsible for the activities for which it is listed under the heading "**Responsible Party**" on Schedule C, and (f) the content of an Option Exercise Data Package, and, to the extent practicable, the specific criteria for acceptance of the Option Exercise Data Package (*e.g.*, [***]).

2.3 Target Selection.

2.3.1 Vertex Target List. The Collaboration Targets will be selected from a list of Targets selected by Vertex (each such Target, a "**Vertex Target**," and collectively, the "**Vertex Targets**" and such list, the "**Vertex Target List**"). As of the Effective Date, the initial Collaboration Targets and initial Vertex Targets are included on Schedule B.

2.3.2 Process to Update the Vertex Target List.

(a) Subject to Section 2.3.2(c), Vertex may [***] Targets as Vertex Targets on the Vertex Target List [***] a Target for a Vertex Target on the Vertex Target List (subject to the [***] Cap) upon written notice to CRISPR; *provided* that (i) [***], and (ii) [***] (the "**Target Cap**"). If the [***] to the Vertex Target List would cause the number of Vertex Targets on the Vertex Target List to [***] or if Vertex is [***] during the Final Target Selection Period, such notice also will specify the Vertex Target to be [***] on the Vertex Target List by such [***] Target. Vertex shall be permitted to [***] of (A) [***] and (B) [***] ((A) or (B), as applicable, the "**[***] Cap**").

(b) For the avoidance of doubt, (1) after the Initial Target Selection Period, Vertex may [***] Targets as Vertex Targets and (2) after the first [***] of the Final Target Selection Period Vertex may [***] Targets within the Vertex Target List, in each case, [***]. The Parties will in good faith discuss any request by Vertex during the Research Term to [***] Targets on the Vertex Target List made at any time when Vertex does not have the right to make such [***] under Section 2.3.2(a).

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(c) If Vertex proposes to [***] a CRISPR Reserved Target to the Vertex Target List or [***] a CRISPR Reserved Target for a Vertex Target on the Vertex Target List pursuant to Section 2.3.2(a) above, such [***] shall not be effective, and CRISPR shall notify Vertex in writing within [***] after the date on which CRISPR receives notice of the proposed [***], that such Target is a CRISPR Reserved Target. CRISPR shall, if requested by Vertex in writing, [***] and, if CRISPR [***] that such Target is a [***] based, in whole or in part, on [***], it shall so notify Vertex. If after providing [***] Vertex will so notify CRISPR, then CRISPR will, [***]. If CRISPR [***] that such Target is a [***] under [***], Vertex may [***]. The [***] shall promptly [***]. The [***]; *provided*, that if, notwithstanding [***], CRISPR believes that a Target is a CRISPR Reserved Target under paragraph 3 of Schedule A, CRISPR may pursue [***] solely with respect to [***]. If a proposed Target is not [***] due to the provisions of this Section 2.3.2(c), such Target will not count against the Substitution Cap (if applicable) and the Vertex Target on the Vertex Target List that was to be replaced by such Target shall remain on the Vertex Target List (if applicable). If, during the Research Term, any Target excluded from the Vertex Target List pursuant to this Section 2.3.2(c) ceases to be a CRISPR Reserved Target, CRISPR will promptly notify Vertex that such Target is no longer a CRISPR Reserved Target, and, thereafter, Vertex may at its option (exercisable at any time within [***] of such notice) add such Target to the Vertex Target List, subject to the limitations set forth in this Section 2.3.2. Vertex may remove Targets from the Vertex Target List upon written notice to CRISPR and thereafter such removed Target will no longer be a Vertex Target (unless such Target is later added again as a Vertex Target in accordance with this Section 2.3.2).

2.3.3 Collaboration Target Selection. Vertex may elect to designate a Vertex Target as a Collaboration Target at any time during the Research Term upon written notice to CRISPR. Within [***] after the designation of a Collaboration Target, the Collaboration Program Working Group will be formed and will provide the JRC an initial draft Research Plan for such Collaboration Target. Subject to Section 3.1.3, the JRC will review such plan and agree upon a final Research Plan for such Collaboration Target. Collaboration Targets continue to be included as Vertex Targets for purposes of the Target Cap.

2.3.4 [***]. The Parties acknowledge that [***] is included as an Initial Collaboration Target [***]. During the Research Term, CRISPR will periodically disclose to Vertex any material findings generated by CRISPR in connection with CRISPR's internal research supporting the conclusion [***]. Following Vertex's receipt of such data, Vertex may elect to [***], as applicable. If any such [***] (other than [***]) is [***], (a) Vertex will [***] and (b) the Collaboration Program Working Group will prepare a Research Plan for [***] and submit such plan to the JRC for its approval as provided in Section 2.3.3.

2.4 Research Term. The term for the conduct of the Collaboration Programs (the "**Research Term**") will begin on the Effective Date and will end on the earlier of (a) the date on which [***] and [***] with respect to six Collaboration Targets and (b) the [***] of the Effective Date; *provided*, *however*, that if any Research activities under a Research Plan (including any Continuation Research) are incomplete on such [***] (and Vertex has not [***]), the Parties will complete such activities in accordance with the applicable Research Plan, and the Research Term will be extended with respect to such Research Plan(s) for up to [***] to complete such activities

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

or [***]; and *provided further*, that during any portion of the Research Term after the [***] of the Effective Date, the Vertex Target List will be dissolved and neither Party will have any further obligation under this Agreement (including under Section 2.13.1) with respect to any Vertex Target that was not selected as a Collaboration Target.

2.5 Research Activities. Following the JRC's approval of a Research Plan, each Party will use Commercially Reasonable Efforts to perform activities for which such Party is responsible under such Research Plan in accordance with the timelines set forth therein. Vertex will be responsible for carrying out all Vertex Activities under a Research Plan, and CRISPR will be responsible for carrying out all CRISPR Activities under each Research Plan. Each Party will, and will require its Affiliates and Subcontractors to, comply with all Applicable Laws in its and their conduct of the activities under a Research Plan, including where appropriate cGMP, GCP and GLP (or similar standards). No more than [***] Research Plans shall be conducted at any given time during the Initial Target Selection Period and no more than [***] Research Plans shall be conducted at any given time during the Final Target Selection Period. CRISPR will dedicate such number of FTEs as is reasonably required to perform the CRISPR Activities under the Research Plans during the Target Selection Period, which CRISPR currently anticipates will be no fewer than an average of [***] FTEs to the performance of Research Plans during the Initial Target Selection Period and no fewer than an average of [***] FTEs to the performance of Research Plans during the Final Target Selection Period.

2.6 Option Exercise Data Package. Within [***] after completion of activities under a Research Plan, CRISPR will provide Vertex with an Option Exercise Data Package for the relevant Collaboration Program. Following Vertex's receipt of the Option Exercise Data Package for a Collaboration Program, Vertex may exercise the Option for the relevant Collaboration Target as provided in Section 4.1; *provided*, that if, within [***] after receipt of the Option Exercise Data Package, Vertex notifies the JRC [***] that [***] with respect to [***] should be [***] of such [***] (such notice, a "**[***]**" and such [***]), and either (a) the requested [***] can reasonably be [***] within [***] following the initiation thereof through the use of [***] or (b) the requested [***] cannot reasonably be [***] within [***] following the initiation thereof, but the Parties mutually agree to [***], the Collaboration Program Working Group will meet and in good faith determine such amendments to the Research Plan as are required to define the activities to be conducted in connection with such Continuation Research and will submit such amendments to the JRC for approval. Following the JRC's approval of such amendment, (i) the Parties will conduct the Continuation Research in accordance with Section 2.5, subject to any limitations or conditions that may be agreed to by the Parties in agreeing to conduct the Continuation Research under the foregoing clause (b), (ii) Vertex will fund such activities as provided in Section 2.10 and (iii) the Collaboration Program Working Group will monitor performance of such Continuation Research and meet no less than [***] (or more frequently as determined by the JRC) to discuss the status thereof. Within [***] following the completion of the Continuation Research, CRISPR will provide Vertex with a revised Option Exercise Data Package reflecting the results of the Continuation Research. CRISPR will provide to Vertex any additional Know-How or data Controlled by CRISPR relating to the applicable Collaboration Target as Vertex may reasonably request after delivery of the Option Exercise Data Package. For clarity, the preceding sentence shall not impose any obligation on CRISPR to generate additional Know-How or data.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

2.7 End of Research Term. At the end of the Research Term, (a) neither CRISPR nor Vertex will have an obligation to perform any additional activities under any Research Plan and (b) CRISPR's obligations and Vertex's rights under this Agreement with respect to any Vertex Target that has not been designated as a Collaboration Target will terminate and the Vertex Target list will be dissolved. For clarity, the expiration of the Research Term will not affect Vertex's rights or CRISPR's obligations with respect to any Collaboration Target for which Vertex has exercised its Option as provided in Section 4.1 or for which the Option Deadline has not occurred.

2.8 Briefing the JRC. At each regularly scheduled meeting of the JRC, which shall be no less frequent than [***], each Party will provide detailed progress updates on activities conducted under each Research Plan along with a summary of data associated with such Research activities under such Research Plans, which updates and summaries will be provided to JRC members at least [***] in advance of any JRC meeting. The agenda for meetings of the JRC will be set by the JRC representatives. Each Collaboration Program will be reviewed by the JRC at minimum every [***].

2.9 Subcontractors. CRISPR may engage consultants, subcontractors, or other vendors (each, a "**Subcontractor**") to perform any work under a Research Plan with Vertex's prior written consent; *provided*, that [***] or (b) identified on Schedule E. Vertex may engage Subcontractors to perform Vertex Activities. Each contract between a Party and a Subcontractor will be consistent with the provisions of this Agreement (including ARTICLE 8 and ARTICLE 12). Each Party will be responsible for the effective and timely management of and payment of its Subcontractors. The engagement of any Subcontractor in compliance with this Section 2.9 will not relieve the applicable Party of its obligations under this Agreement or the Research Plan. Each Party will be solely responsible for any taxes, including income, withholding, payroll, VAT, sales tax or the like, that arise from the use of a Subcontractor.

2.10 Research Costs. Vertex will reimburse CRISPR for Research Costs incurred by CRISPR in accordance with Section 7.4. All costs incurred by Vertex in connection with Vertex Activities will be borne solely by Vertex.

2.11 Transfer of Materials. To facilitate the conduct of activities under each Research Plan, each Party will provide any Materials required by the Research Plan to be transferred to the other Party, and each Party may provide to the other Party certain other Materials. All Materials (a) will remain the sole property of the supplying Party, (b) will be used only in the fulfillment of the receiving Party's obligations or exercise of rights under this Agreement, (c) will remain solely under the control of the receiving Party, (d) will not be used or delivered by the receiving Party to or for the benefit of any Third Party (other than a permitted Subcontractor or Sublicensee) without the prior written consent of the supplying Party, and, (e) except with respect to any Materials provided by CRISPR to Vertex hereunder for use in a Clinical Trial, will not be used in research or testing involving human subjects, unless expressly agreed. Subject to Section 9.2, all Materials supplied under this Section 2.11 are supplied "as is", with no warranties of fitness for a particular purpose and must be used with prudence and appropriate caution in any experimental work, since not all of their characteristics may be known.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

2.12 Additional Research. At any time following exercise of an Option for a Collaboration Target, Vertex may request that CRISPR provide additional Research services to Vertex, with respect to such Collaboration Target ("**Additional Research**"). Upon such request, the Parties will meet and discuss in good faith whether CRISPR is able to provide those services and a mutually-agreeable plan (the "**Additional Research Plan**"), including a timeline, and budget, which will be subject to the approval of the JRC (the "**Additional Research Budget**") therefor; *provided* that CRISPR may, in its sole discretion, refuse to perform Additional Research. Vertex will reimburse CRISPR for Research Costs incurred in performing activities under the Additional Research Plan as provided in Section 7.4. CRISPR will provide Vertex with the results of any Additional Research promptly following the completion thereof.

2.13 Exclusivity Covenants.

2.13.1 [***]. Subject to Section 2.13.4(a) and Section 2.13.5, during [***], each Party agrees that, except in the performance of its obligations or exercise of its rights under this Agreement, [***] with respect to the discovery, research, development, manufacture or commercialization in the Field of (a) [***] or (b) [***]. For the avoidance of doubt, each Party's obligations under this Section 2.13.1 will terminate (i) with respect to [***] and (ii) with respect to [***].

2.13.2 [***]. Subject to Section 2.13.4(a) and Section 2.13.5, during [***], each Party agrees that, except in the performance of its obligations or exercise of its rights under this Agreement, [***] with respect to the discovery, research, development, manufacture or commercialization in the Field of (a) [***] or (b) [***]. For the avoidance of doubt, each Party's obligations under this Section 2.13.2 will terminate with respect to a [***] upon [***].

2.13.3 [***]. Subject to Section 2.13.4(a) and Section 2.13.5, commencing on the Effective Date and [***] hereunder, [***] with respect to the discovery, research, development, manufacture or commercialization in the Field of (a) [***] or (b) [***]; *provided*, *however*, that notwithstanding the foregoing, during such period, [***].

2.13.4 Cystic Fibrosis.

(a) Notwithstanding anything to the contrary contained herein, the provisions of Sections 2.13.1, 2.13.2 and 2.13.3 will not apply with respect to the discovery, research, development, manufacture or commercialization of any product for the treatment of cystic fibrosis by Vertex or its Affiliates and Vertex and its Affiliates will not be restricted from conducting such activities.

(b) During the Agreement Term, CRISPR agrees that neither it nor any of its Affiliates will work independently or for the benefit of or with any Third Party (including the grant of any license to any Third Party) with respect to the discovery, research, development, manufacture or commercialization of any product containing (a) [***] or (b) [***], *provided* that there is [***].

2.13.5 Delivery Technology. Notwithstanding the provisions of Sections 2.13.1, 2.13.2, 2.13.3 and 2.13.4(b), either Party may, independently or for the benefit of or with any Third Party, discover, research, develop, manufacture or commercialize technology for use in [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

2.13.6 Acquisition of Distracting Product. Notwithstanding the provisions of Sections 2.13.1, 2.13.2, 2.13.3 and 2.13.4(b), if a Party or any of its Affiliates (such Party, the "**Distracted Party**") acquires rights to research, develop or commercialize a Distracting Product in the Field as the result of a merger, acquisition or combination with or of a Third Party other than a Change of Control (each, an "**Acquisition Transaction**") and, on the date of the completion of such Acquisition Transaction, such Distracting Product is being researched, developed or commercialized and such activities would, but for the provisions of this Section 2.13.6, constitute a breach of Section 2.13.1, 2.13.2, 2.13.3 or 2.13.4(b), as applicable, then the Distracted Party or such Affiliate will, within [***] after the completion of such Acquisition Transaction notify the other Party of such acquisition and either:

(a) request that such Distracting Product be included in this Agreement on terms to be negotiated, in which case, the Parties will discuss the matter in good faith for a period of no less than [***] (or such longer period as may be agreed by the Parties) and, if unable to reach agreement on the terms on which such Distracting Product would be included hereunder within such period, the Distracted Party will elect to take the action specified in either clause (b) or (c) below; *provided* that the time periods specified in such clauses will be tolled for so long as the Parties are engaged in discussion under this clause (a);

(b) notify the other Party that the Distracted Party or its Affiliate will Divest its rights to such Distracting Product, in which case, within [***] after the completion of the Acquisition Transaction, the Distracted Party or its Affiliate will Divest such Distracting Product; or

(c) notify the other Party in writing that it is ceasing all such research, development and commercialization activities with respect to the Distracting Product, in which case, within [***] thereafter the Distracted Party and its Affiliates will cease all such activities.

During the discussion period under clause (a), prior to the time of Divestiture pursuant to clause (b) or prior to the termination of activities pursuant to clause (c), as applicable, the Distracted Party and its Affiliates will use Commercially Reasonable Efforts to segregate all research, development or commercialization activities relating to the Distracting Product from Research, Development and Commercialization with respect to Licensed Agents or Products under this Agreement, including using Commercially Reasonable Efforts to ensure that (i) no personnel involved in performing the research, development or commercialization of such Distracting Product have access to non-public plans or information relating to the Research, Development or Commercialization of Products (*provided* that management personnel may review and evaluate plans and information regarding the Research, Development and Commercialization of Products in connection with portfolio decision-making) and (ii) no personnel involved in performing the Development or Commercialization of Products have access to non-public plans or information relating to the Development or Commercialization of such Distracting

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Product (*provided* that management personnel may review and evaluate plans and information regarding the Development and Commercialization of such Distracting Product in connection with portfolio decision-making).

2.13.7 Change of Control. If there is a Change of Control involving a Party (where such Party is the acquired entity), the obligations of Sections 2.13.1, 2.13.2, 2.13.3 and 2.13.4(b), as applicable, will not apply to any product containing a (a) a [***] or (b) a [***], in each case, that is Controlled by the relevant acquirer or its Affiliates that exists prior to the closing of such Change of Control; *provided* that (i) the acquired Party and the acquirer and its Affiliates existing immediately prior to the effective date of such Change of Control establish and enforce internal processes, policies, procedures and systems to segregate information relating to any such product from any Confidential Information related to the Licensed Agents and Products under this Agreement, (ii) the acquirer and its Affiliates existing immediately prior to the effective date of such Change of Control do not use, directly or indirectly, any Patents, Know-How or Confidential Information of the acquired Party (including any Patents, Know-How or Confidential Information licensed or acquired from the other Party under this Agreement) in connection with such product, and (iii) no personnel who were employees or consultants of the acquired Party or its Affiliates at any time prior to or after the Change of Control will conduct any activities relating to such product.

ARTICLE 3
GOVERNANCE

3.1 Joint Research Committee.

3.1.1 Formation. Within 30 days after the Effective Date, the Parties will establish a joint research committee (the "**Joint Research Committee**" or "**JRC**") to oversee and coordinate activities under this Agreement. The JRC will be comprised of [***] representatives from each Party, with one such representative to have [***]. The JRC will conduct its responsibilities hereunder in good faith and with reasonable care and diligence. The JRC will meet in person at least once each Calendar Quarter on such dates and at such times and places as agreed to by the members of the JRC. The purpose of the JRC will be to provide the members periodic updates regarding progress of activities pursuant to this Agreement and to address the matters set forth in Section 3.1.2. Each Party will be responsible for its own expenses relating to attendance at or participation in JRC meetings.

3.1.2 Responsibilities. The JRC will:

(a) review and approve any initial or amended Research Plan, including the corresponding Research Budget, the planned content of an Option Exercise Data Package, and, to the extent practicable, the specific criteria for acceptance of the Option Exercise Data Package;

(b) prioritize the performance of activities under the Research Plans (including Continuation Research) for Collaboration Targets;

(c) provide comments and recommendations to each Party with respect to the conduct of activities under each Research Plan;

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(d) assist in planning and facilitating the transfer of Research responsibility and activities from CRISPR to Vertex upon Option Exercise as needed;

(e) provide a forum for the Parties to discuss the objectives and progress under each Research Plan and to exchange and review scientific information and data relating to the activities being conducted under each Research Plan;

(f) during the [***], discuss the [***];

(g) during the [***], discuss the [***]; and

(h) perform such other duties as are specifically assigned to the JRC under this Agreement.

3.1.3 Decision-Making. The JRC members will use reasonable efforts to reach agreement on any and all matters that the JRC has the authority to decide and endeavor to reach consensus on all such matters, taking into consideration the views of each Party. If the JRC is unable to reach consensus with respect to any such matter within [***], the matter will be referred to the Executive Officers, who will use reasonable efforts to reach agreement on such matter. If such Executive Officers are unable to reach consensus with respect to such matter with [***] after such matter is first referred to such Executive Officers, then [***] will have the right to make the final decision with respect to the relevant matter; *provided* that [***] (i) will take into reasonable consideration the recommendations and concerns raised by [***], (ii) will make such decisions in good faith using reasonable business judgment, which will not be unreasonably delayed, and (iii) will not have the right to: (A) amend, modify or waive compliance with any term or condition of this Agreement; (B) make any decision that is expressly stated to require the mutual agreement of the Parties; (C) resolve any claim or dispute regarding whether or in what amount a payment is owed under this Agreement; (D) exercise its final decision-making authority in a manner that would require [***] to perform any act that [***] reasonably believes would constitute a violation of an Applicable Law; (E) make a determination that a Party is in material breach of any obligation under this Agreement or (F) amend or modify a Research Plan if such amendment or modification would require [***] to expend additional resources, whether internal or external, including capital expenditures for which [***] as provided herein.

3.1.4 Discontinuation of the JRC. The JRC's authority with respect to a given Collaboration Program will continue to exist until the first to occur of (a) the Parties mutually agreeing to terminate the JRC's authority with respect to such Collaboration Program and (b) the completion of all activities under the Research Plan for such Collaboration Program. The JRC will disband when it ceases to have authority over any Collaboration Program pursuant to the preceding sentence.

3.2 Collaboration Program Working Group. Within [***] after Vertex designates a Vertex Target as a Collaboration Target as provided in Section 2.3.3 (or with respect to the Initial Collaboration Targets, within [***] after the Effective Date), the Parties will form a working group (a "**Collaboration Program Working Group**") comprised of an equal number of representatives from each Party having relevant expertise with respect to the given

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Collaboration Program. The Collaboration Program Working Group shall be chaired by a project leader from [***], whose appointment shall be subject to the reasonable approval by [***]. The Collaboration Program Working Group will create the initial Research Plan and Research Budget, the planned content of an Option Exercise Data Package, and, to the extent practicable, the specific criteria for acceptance of the Option Exercise Data Package for the applicable Collaboration Program. The Collaboration Program Working Group will also oversee and coordinate the performance of activities under the Research Plan for such Collaboration Program and perform such other activities as the JRC may delegate to the Collaboration Program Working Group from time to time. Any disputes arising out of the Collaboration Program Working Group will be escalated to the JRC for resolution.

3.3 Other Committees. The Parties may, by mutual agreement, form such other committees or working groups as may be necessary or desirable to facilitate the activities under this Agreement. Any dispute arising from such committees or working groups will be escalated to the JRC for resolution.

3.4 Alliance Managers.

3.4.1 Appointment. Within [***] following the Effective Date each Party will appoint (and notify the other Party of the identity of) a representative of such Party to act as its alliance manager under this Agreement (each an "**Alliance Manager**"). Each Party may replace its Alliance Manager at any time by written notice to the other Party.

3.4.2 Specific Responsibilities. The Alliance Managers may be, but will not be required to be, members of the JRC. The Alliance Managers will serve as the primary contact point between the Parties for the purpose of providing each Party with information regarding the other Parties' activities pursuant to this Agreement and will have the following responsibilities:

(a) schedule meetings of the JRC and circulate draft written minutes from each meeting within [***] after each such meeting;

(b) facilitate the flow of information and otherwise promoting communication, coordination and collaboration between the Parties;

(c) coordinate the various functional representatives of each Party, as appropriate, in developing and executing strategies and plans for Licensed Agents and Products;

(d) provide a single point of communication for seeking consensus both internally within the respective Party's organization and between the Parties regarding key strategy and planning issues;

(e) coordinate and facilitate budget, finance and billing activities as overseen by the JRC; and

(f) perform such other functions as requested by the JRC.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

ARTICLE 4
EXCLUSIVE OPTION

4.1 Option.

4.1.1 Option and Option Deadline. CRISPR hereby grants to Vertex and its Affiliates an exclusive option to obtain the Exclusive License with respect a maximum of six Collaboration Targets (each, an "**Option,**" and such six Collaboration Target maximum, the "**Option Cap**"). Within [***] after Vertex's receipt of an Option Exercise Data Package for the applicable Collaboration Program (the "**Option Deadline**"), Vertex will notify CRISPR as to whether or not Vertex is exercising the applicable Option; *provided*, that if, following receipt of the applicable Option Exercise Data Package, Vertex delivers a [***] to the JRC, the Option Deadline will be extended until the date that is [***] after Vertex's receipt of a revised Option Exercise Data Package reflecting the results of the Continuation Research as provided in Section 2.6. If Vertex or its designated Affiliate notifies CRISPR in writing that it wishes to exercise the applicable Option, CRISPR will, and hereby does, grant to Vertex or its designated Affiliate the Exclusive License with respect to Licensed Agents and Products directed to such Collaboration Target and, except with respect to Collaboration Targets that are [***] with respect to such Collaboration Target; *provided*, *however*, if Vertex determines that an HSR Filing is required to be made under the HSR Act to exercise an Option and notifies CRISPR of such determination within [***] after Vertex's receipt of the complete Option Exercise Data Package, the Parties will promptly file an HSR Filing in accordance with Section 4.1.2(a) and Vertex's election to exercise the applicable Option will not be effective (and Vertex will not be obligated to make any payment under Section 7.3.1) until the HSR Clearance Date. If Vertex fails to timely exercise an Option in accordance with this Section 4.1.1, the Option shall expire and be of no further force or effect, both Party's obligations under Section 2.13.1 shall terminate with respect to the relevant Collaboration Target, such Collaboration Target shall no longer be a Collaboration Target nor a Vertex Target and Vertex shall be deemed to have terminated the relevant Collaboration Program for purposes of ARTICLE 11 of this Agreement.

4.1.2 HSR Compliance.

(a) HSR Filing. If Vertex notifies CRISPR pursuant to Section 4.1.1 that an HSR Filing is required for Vertex to receive the Exclusive License with respect to a Collaboration Target, each of Vertex and CRISPR will, within [***] after such notice from Vertex (or such later time as may be agreed to in writing by the Parties), file with the United States Federal Trade Commission ("**FTC**") and the Antitrust Division of the United States Department of Justice ("**DOJ**"), any HSR Filing required with respect to the transactions contemplated hereby. The Parties will cooperate with one another to the extent necessary in the preparation of any such HSR Filing. Each Party will be responsible for its own costs and expenses (other than filing fees, which Vertex will pay) associated with any HSR Filing.

(b) HSR Clearance. In furtherance of obtaining clearance for an HSR Filing filed pursuant to this Section 4.1.2, CRISPR and Vertex will use their respective Commercially Reasonable Efforts to resolve as promptly as practicable any objections that may be asserted with respect to this Agreement or the transactions contemplated by

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

this Agreement under any antitrust, competition or trade regulatory law. In connection with obtaining such HSR clearance from the FTC, the DOJ or any other governmental authority, Vertex and its Affiliates will not be required to (i) sell, divest (including through a license or a reversion of licensed or assigned rights), hold separate, transfer or dispose of any assets, operations, rights, product lines, businesses or interest therein of Vertex or any of its Affiliates (or consent to any of the foregoing actions); or (ii) litigate or otherwise formally oppose any determination (whether judicial or administrative in nature) by a governmental authority seeking to impose any of the restrictions referenced in clause (i) above.

ARTICLE 5
LICENSE GRANTS

5.1 Non-Exclusive Research License from CRISPR to Vertex. Subject to the terms and conditions of this Agreement, CRISPR and, following the Subsidiary Transfer, the CRISPR Subsidiary, hereby grants Vertex UK and its Affiliates a non-exclusive, royalty-free, fully paid-up, worldwide license, with no right to grant sublicenses except to permitted Subcontractors under Section 2.9, to use the Licensed Technology solely to perform the Vertex Activities during the Research Term.

5.2 Non-Exclusive Research and Development License from Vertex to CRISPR. Subject to the terms and conditions of this Agreement, Vertex hereby grants to CRISPR a non-exclusive, royalty-free, fully paid-up, worldwide license, with no right to grant sublicenses except to permitted Subcontractors under Section 2.9, under the Vertex Technology solely to perform Research under the Research Plan for each Collaboration Program during the Research Term.

5.3 License Grants to Vertex.

5.3.1 Development and Commercialization Licenses. Subject to the terms and conditions of this Agreement, on a Collaboration Target-by-Collaboration Target basis, effective upon Vertex's exercise of the Option for a particular Collaboration Target in accordance with this Agreement, CRISPR and, following the Subsidiary Transfer, the CRISPR Subsidiary, grants to Vertex UK and its Affiliates an exclusive (subject to Section 6.1.2(b)), royalty-bearing, license under CRISPR's and its Affiliates' interest in the Licensed Technology to Research, Develop, Manufacture, have Manufactured, use, keep, sell, offer for sale, import, export and Commercialize Licensed Agents and Products directed to the relevant Collaboration Target in the Field in the Territory (such license, the "**Exclusive License**"). Vertex may grant sublicenses through multiple tiers of sublicense to one or more Sublicensees of any and all rights granted to Vertex by CRISPR under the Exclusive License; *provided* that Vertex shall only be permitted to grant a Sublicense to conduct any Commercialization activities with respect to a Licensed Agent or Product [***] with CRISPR's prior written consent, such consent not to be unreasonably withheld, conditioned or delayed; and *provided*, *further*, that no such consent will be needed with respect to any Sublicense (a) granted to a Third Party to conduct Commercialization activities with respect to a Licensed Agent or Product in [***] (and not any other [***]), (b) any Sublicense granted to a Distributor or other Third Party conducting activities on Vertex's behalf or (c) any Sublicensee granted to a Third Party to Manufacture Licensed Agent or Product on

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Vertex's behalf. Each such Sublicense will be subject and subordinate to, and consistent with, the terms and conditions of this Agreement and will require such Sublicensee to comply with all applicable terms of this Agreement and all Third Party Obligations. Vertex shall promptly provide CRISPR with a copy of the fully executed Sublicense agreement covering any sublicense granted hereunder (which copy may be redacted to remove provisions which are not necessary to monitor compliance with this Section 5.3.1). Notwithstanding the grant of any Sublicense, Vertex shall remain primarily liable to CRISPR for the performance of all of Vertex's obligations under, and Vertex's compliance with all provisions of, this Agreement.

5.3.2 License Conditions; Limitations. Subject to Section 7.6, any rights and obligation hereunder, including the rights granted pursuant to any Exclusive License with respect to a Collaboration Target, are subject to and limited by any applicable Third Party Obligations to the extent the provisions of such obligations or agreements are specifically disclosed to Vertex in writing (or via electronic data room) (a) with respect to Third Party Obligations existing as of the Effective Date, prior to the Effective Date, (b) with respect to Third Party Obligations arising between the Effective Date and the delivery of the relevant Option Exercise Data Package, at the time of delivery of the Option Exercise Data Package and (c) with respect to Third Party Obligations arising after the date the applicable Exclusive License is granted hereunder, on or prior to the date on which such Third Party Obligations arise. Vertex will have the right to [***] any Third Party Patents and Know-How to which such Third Party Obligations [***] by providing CRISPR [***] (with respect to any Third Party Obligations existing at the time the relevant Option Exercise Data Package is delivered) or [***], in which case, such Third Party Patents and Know-How [***] this Agreement. If Vertex does not provide CRISPR [***] Third Party Patents and Know-How as provided above, such Third Party Patents and Know-How [***] under this Agreement and Vertex will be subject to the Third Party Obligations [***].

5.4 Licenses to Improvements.

5.4.1 License to CRISPR. Subject to the terms and conditions of this Agreement, Vertex hereby grants to CRISPR a perpetual, irrevocable, non-exclusive, royalty-free, fully paid-up, worldwide, sublicensable, license to all improvements or modifications to the CRISPR Platform Technology Patents, CRISPR Background Patents (to the extent existing on the Effective Date or otherwise claiming the CRISPR Background Know-How set forth on Schedule F), [***] or CRISPR Background Know-How set forth on Schedule F (as may be supplemented by mutual written agreement of the Parties from time to time), whether or not patentable, that arise in the course of performing activities under a Research Plan or in the course of Developing and Commercializing a Licensed Agent or Product and are Controlled by Vertex or its Affiliates to make, have made, use, sell, keep, offer for sale and import products other than Licensed Agents and Products.

5.4.2 License to Vertex. Subject to the terms and conditions of this Agreement, CRISPR, and, following the Subsidiary Transfer, to the extent necessary, the CRISPR Subsidiary, hereby grants to Vertex a perpetual, irrevocable, non-exclusive, royalty-free, fully paid-up, worldwide, sublicensable, license to all improvements or modifications to the Vertex Background Know-How or Vertex Background Patents, whether or not patentable, that arise in the course of performing activities under a Research Plan and are Controlled by CRISPR or its Affiliates to make, have made, use, sell, keep, offer for sale and import products other than Licensed Agents and Products.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

5.5 Technology Transfer after Option Exercise.

5.5.1 Transition Agreement. Upon each exercise by Vertex of an Option, the Parties will negotiate and execute an agreement setting forth the Parties' respective obligations with respect to the transfer of data and Materials relating to the relevant Collaboration Target from CRISPR to Vertex, all in accordance with this Section 5.5.

5.5.2 Licensed Know-How. On a Collaboration Target-by-Collaboration Target basis, CRISPR will promptly, but no later than [***] after Vertex exercises its Option for such Collaboration Target hereunder, make available and, at Vertex's request, deliver to Vertex or one or more designated Affiliates all documented Licensed Know-How in CRISPR's possession that has not previously been provided hereunder, for use in accordance with the exercise of the applicable Exclusive License. To assist with the transfer of such Licensed Know-How, CRISPR will make its personnel reasonably available to Vertex during normal business hours to transfer such Licensed Know-How under this Section 5.5.2 and Vertex will reimburse CRISPR for the reasonable costs of such assistance at the FTE Rate within 30 days after its receipt of an invoice therefor.

5.5.3 Transfer of Manufacturing Know-How and Materials. Without limiting CRISPR's obligations under Section 5.5.2, within [***] following the exercise of an Option, and thereafter, promptly following Vertex's request, CRISPR will, or will cause the applicable Third Party (including any contract manufacturing organization engaged by CRISPR to Manufacture any Licensed Agent or Product) to, transfer to Vertex (a) all Licensed Know-How that is necessary or useful to enable the Manufacture of each Licensed Agent or Product for the applicable Collaboration Target, and not previously transferred to Vertex under this Agreement, by providing copies or samples of relevant documentation, materials and other embodiments of such Licensed Know-How, and by making available its, or the applicable Third Party's, qualified technical personnel on a reasonable basis to consult with Vertex with respect to such Licensed Know-How and (b) at Vertex's request, any Materials used by CRISPR or its Affiliates or Subcontractors in the Manufacture of such Licensed Agent or Product.

5.5.4 Transfer of Regulatory Filings and Data. On a Collaboration Target-by-Collaboration Target basis and effective as of the date on which Vertex is granted the Exclusive License for a Collaboration Target, CRISPR will, and hereby does, assign to Vertex any and all Regulatory Filings or any other rights or permissions granted by any Regulatory Authority to Vertex related to any Licensed Agent or Product directed to such Collaboration Target, together with all Research, Development and Manufacturing data relating to such Collaboration Target, in each case, not previously assigned by CRISPR to Vertex. Further, CRISPR will take all actions and provide all assistance reasonably requested by Vertex to effect the assignments in this Section 5.5.4.

5.5.5 Right of Reference. Vertex hereby grants to CRISPR the right to rely upon and a right to copy, access, and otherwise use, all Adverse Event information pertaining to each Product as reasonably required in connection with the Development and Commercialization

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(subject to Section 2.13) of products, and Vertex shall, if requested by CRISPR, provide a signed statement that CRISPR may rely on, and the Regulatory Authority may access, in support of CRISPR's application for Regulatory Approval of such products.

5.6 No Implied Licenses. All rights in and to Licensed Technology not expressly licensed or assigned to Vertex under this Agreement are hereby retained by CRISPR or its Affiliates. All rights in and to any Vertex Technology not expressly licensed to CRISPR under this Agreement, are hereby retained by Vertex or its Affiliates. Except as expressly provided in this Agreement, no Party will be deemed by estoppel or implication to have granted the other Party any licenses or other right with respect to any intellectual property.

ARTICLE 6
PROFIT/LOSS SHARING, DEVELOPMENT, MANUFACTURING AND COMMERCIALIZATION

6.1 CRISPR Profit/Loss Sharing.

6.1.1 Profit/Loss Sharing. CRISPR will jointly (with Vertex or Affiliate(s) designated by Vertex) Research, Develop and Commercialize Products containing (a) any Licensed Agent directed to a Collaboration Target that is a Hemoglobinopathy Target or (b) [***] and, in each case, for which Vertex has obtained the Exclusive License, as provided herein, unless, in each case, CRISPR exercises an Opt-Out in accordance with Schedule G.

6.1.2 Effects of Co-Commercialization. For each Collaboration Target set forth in clauses (a) or (b) of Section 6.1.1:

(a) each Product for the relevant Collaboration Target will be deemed a "**Shared Product**";

(b) the Exclusive License with respect to the relevant Collaboration Target will become co-exclusive (with CRISPR);

(c) within [***] after Vertex has exercised the Option to obtain the Exclusive License for such Collaboration Target, CRISPR and Vertex (or any Affiliates designated by Vertex) will enter into an agreement (the "**Joint Development & Commercialization Agreement**"), which the Parties will negotiate in good faith and which will include appropriate plans and budgets, for the joint Development and Commercialization of Shared Products (or provisions for establishing such plans) and will include (i) terms and conditions that are substantially the same as those set forth in Schedule G and (ii) other reasonable and customary provisions for transactions of this type as the Parties may agree. If the terms of this Agreement conflict with the terms of the Joint Development & Commercialization Agreement, the terms of the Joint Development & Commercialization Agreement will control with respect to the Collaboration Program that is the subject thereof and the terms of this Agreement will control with respect to all other matters; and

(d) [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

6.2 Responsibility. Following an Option Exercise, Vertex will be solely responsible for all Research, Development, Manufacturing and Commercialization of Licensed Agents and Products for the relevant Collaboration Target that are performed after the date on which the Option was exercised and for all costs and expenses associated therewith, except (a) as may be otherwise provided in a Joint Development & Commercialization Agreement, (b) with respect to any incomplete activities under the relevant Research Plan or any agreed-upon Additional Research and (c) for the transfer of activities to Vertex as contemplated by Section 5.5.

6.3 Vertex Diligence.

6.3.1 Development Diligence. Except with respect to Shared Products, following Vertex's exercise of the Option for a Collaboration Target, Vertex (acting directly or through one or more Affiliates or Sublicensees) will use Commercially Reasonable Efforts to Develop, obtain Marketing Approvals for [***] in [***].

6.3.2 Commercial Diligence. Except with respect to Shared Products, Vertex (acting directly or through one or more Affiliates or Sublicensees) will use Commercially Reasonable Efforts to Commercialize, including seeking Price Approval on appropriate terms, [***] in [***].

6.4 Product Development & Commercialization Plan. On a Collaboration Program-by-Collaboration Program basis, Vertex will prepare a Development and Commercialization plan setting forth in reasonable detail (which detail shall be at least sufficient for CRISPR to evaluate Vertex's compliance with its obligations under this Agreement) Vertex's plans for (a) the Development of each Product for the relevant Collaboration Target through Clinical Trials designed to show Establishment of POC, (b) starting after Establishment of POC, the Development of each Product through Marketing Approval and (c) starting upon Marketing Approval for a Product and continuing thereafter until the expiration of the applicable Royalty Term, Commercialization for the Product, as appropriate for the stage of the Product, including a launch plan for each Major Market Country (each, an "**Product Development & Commercialization Plan**"). If Vertex is Developing or Commercializing more than one Product directed to a Collaboration Target, the Product Development & Commercialization Plan will include the foregoing information for each such Product. Vertex will prepare the initial Product Development & Commercialization Plan for a Collaboration Program no later than [***] after Option Exercise by performing the activities set forth in each Research Plan for the relevant Collaboration Target. Once Vertex has prepared such Product Development & Commercialization Plan, Vertex will update such plan no less than [***] so that such Product Development & Commercialization Plan is an accurate reflection of Vertex's then-current plans with respect to the Development and Commercialization of the relevant Product and Vertex will provide such updates to CRISPR for its review. All Product Development & Commercialization Plans are provided solely for informational purposes, and Vertex's failure to follow a Product Development & Commercialization Plan will not constitute a breach of this Agreement. Notwithstanding the foregoing, Vertex will have no obligation under this Section 6.4 with respect to any Shared Product.

6.5 Applicable Laws. Each Party will, and will require its Affiliates, Sublicensees and Subcontractors to, comply with all Applicable Law in its and their Research, Development, Manufacture and Commercialization of Products, including where appropriate cGMP, GCP and GLP (or similar standards).

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

6.6 Regulatory Matters; Safety Data Exchange Agreement.

6.6.1 Responsibilities. Vertex or its designated Affiliates and Sublicensees will have the sole authority to prepare and file Regulatory Filings, each in its own name, and applications for Regulatory Approval and Price Approval for any and all Licensed Agents and Products directed to each Collaboration Target, and will have the sole responsibility for communicating with any Regulatory Authority both prior to and following Regulatory Approval and Price Approval, including all communications and decisions with respect to (a) pricing of Products and (b) the negotiation of Product pricing with Regulatory Authorities and other Third Parties.

6.6.2 Ownership. Ownership of all right, title and interest in and to any and all Regulatory Filings, Regulatory Approvals and Price Approvals directed to any Licensed Agent or any Product directed to each Collaboration Target in each country of the Territory will be held in the name of Vertex, its Affiliate, designee or Sublicensee.

6.6.3 Pharmacovigilance. Upon Vertex's request, the Parties will negotiate and enter into a separate safety data exchange agreement (a "**Safety Data Exchange Agreement**"). The Safety Data Exchange Agreement will set forth guidelines and procedures for the receipt, investigation, recording, review, communication, reporting and exchange between the Parties of adverse event reports (which, for purposes of information exchange between the Parties, will include adverse events and serious adverse events, and any other information concerning the safety of any Product or Licensed Agent and, with respect to information provided by CRISPR, concerning the safety of products containing a [***] or [***]). Without limiting the foregoing, the Parties will meet to establish a safety oversight working group comprised of members of both Parties, which, except as otherwise provided in the Safety Data Exchange Agreement, will discuss processes and procedures for sharing information needed to support each Party's regulatory responsibilities and to comply with applicable regulatory pharmacovigilance requirements. Any such procedures will not be construed to restrict either Party's ability to take any action that it deems to be appropriate or required of it under the applicable regulatory requirements, if permitted by Applicable Laws. Vertex (a) will maintain a unified worldwide adverse event database for Products, and be responsible for reporting adverse events and serious adverse events to the applicable Regulatory Authorities and (b) will be responsible for all signal detection and risk management activities and will develop and approve the contents of all safety communications to Regulatory Authorities, including but not limited to expedited non-clinical and clinical safety reports and aggregate reports to health authorities, institutional review boards and ethics committees.

6.7 Commercialization.

6.7.1 General. Vertex will have sole and exclusive control over all matters relating to the Commercialization of Products, except as may be otherwise provided in a Joint Development & Commercialization Agreement.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

6.7.2 Branding. Vertex or its designated Affiliates or Sublicensees will select and own all trademarks used in connection with the Commercialization of any and all Products. CRISPR will not use nor seek to register, anywhere in the world, any trademark that is confusingly similar to any trademark used by or on behalf of Vertex, its Affiliates or Sublicensees in connection with any Product.

6.8 Manufacturing. Vertex will have the exclusive right to Manufacture and supply Licensed Agents and Products itself or through one or more Affiliates or Third Parties selected by Vertex in its sole discretion. The Parties may share information relating to the Manufacture of Products, and other products to be commercialized by CRISPR, to determine whether and how to leverage their respective manufacturing efforts, but shall have no obligation hereunder to enter into an agreement with respect thereto.

ARTICLE 7
FINANCIAL PROVISIONS

7.1 Up-Front Fee to CRISPR AG (Switzerland). Within four Business Days following the Effective Date, Vertex UK will pay CRISPR AG a one-time, non-refundable, non-creditable, upfront fee of $75,000,000 payable by wire transfer of immediately available funds.

7.2 [***]. if Vertex [***], Vertex will [***] within [***] after Vertex notifies CRISPR that it is [***]. The [***] that are [***].

7.3 Milestone Payments.

7.3.1 Development Milestones. Subject to Section 7.3.4, Vertex will pay CRISPR the milestone payments set forth in this Section 7.3.1 with respect to each Collaboration Target [***], whether such milestone event is achieved by CRISPR, Vertex or their respective Affiliates or any Sublicensees. Each milestone payment set forth below, is payable only once per Collaboration Target, regardless of the number of Products directed to such Collaboration Target that achieve the relevant milestone event.

Milestone Number	Milestone Event	Milestone Payment
1	Option Exercise for a Collaboration Target	$10,000,000
2	Filing of an IND for a Product with a Regulatory Authority in a Major Market Country	$10,000,000
3	Initiation of the first Clinical Trial of a Product	$10,000,000
4	Establishment of POC for a Product	$30,000,000
5	Initiation of the first Phase 3 Clinical Trial of a Product	[***]
6	Acceptance of Approval Application by the FDA for a Product	[***]
7	Acceptance of Approval Application by the EMA for a Product	[***]
8	Acceptance of Approval Application by a Regulatory Authority in Japan for a Product	[***]
9	Marketing Approval in	

	the US for a Product	[***]
10	Marketing Approval in EU for a Product	[***]
11	Marketing Approval in Japan for a Product	[***]

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

7.3.2 Commercial Milestones. Subject to Section 7.3.4, Vertex will pay CRISPR the milestone payments set forth in this Section 7.3.2 with respect to each Collaboration Target [***], whether such milestone event is achieved by Vertex or its Affiliates or any of their Sublicensees. Each milestone payment set forth below, is payable only once per Collaboration Target, regardless of the number of Products directed to such Collaboration Target that achieve the relevant milestone event or the number of times Product(s) achieve such milestone event.

Milestone Number	Milestone Event	Milestone Payment
12	Annual Net Sales for Products with respect to a Collaboration Target exceed $500,000,000	[***]
13	Annual Net Sales for Products with respect to a Collaboration Target exceed $1,000,000,000	[***]

7.3.3 Notice; Payment; Skipped Milestones. Vertex will provide CRISPR with written notice upon the achievement of each of the milestone events set forth in Section 7.3.1 or 7.3.2, such notice to be provided, (a) with respect to milestones under Section 7.3.1, within [***] after achievement, and (b) with respect to milestones under Section 7.3.2, [***] for the Calendar Quarter in which such milestone is first achieved. Following receipt of such notice, CRISPR will promptly invoice Vertex for the applicable milestone and Vertex will make the appropriate milestone payment within [***] after receipt of such invoice. The milestones numbered [***] as set forth in Section 7.3.1 are intended to be successive; if a Product for a Collaboration Target is not required to undergo the event associated with any such milestone event, such skipped milestone will be deemed to have been achieved upon the achievement by such Product of the next successive milestone event. Payment for any such skipped milestone that is owed in accordance with the provisions of the foregoing sentence with respect to a given Product will be due concurrently with the payment for the next successive milestone event by such Product, it being agreed that if a Product for a Collaboration Target is not required to undergo the milestone numbered [***], the corresponding payment will be made upon the first to occur of the milestones numbered [***].

7.3.4 Failure to Obtain Necessary Agreements. If, at the time any milestone event under Section 7.3.1 or Section 7.3.2 is achieved, CRISPR has not obtained all necessary consents and agreements and taken all actions provided for under Section 9.3.10, [***].

7.4 Research Costs.

7.4.1 As soon as practicable, but in any event within [***] after the end of each [***], CRISPR will provide Vertex with a flash report estimating reimbursable Research Cost, if any, incurred by it and its Affiliates during the just-ended [***].

7.4.2 Within [***] after the end of each [***], CRISPR will submit to Vertex an itemized report of Research Costs, if any, incurred by CRISPR and its Affiliates during such [***] (the "**Cost Report**"), including reasonable supporting documentation.

7.4.3 Vertex will reimburse CRISPR for all Research Costs in accordance with the applicable Research Budget or Additional Research Budget within [***] after its receipt of

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

the applicable Cost Report. If the Research Costs for a Research Plan or Additional Research Plan exceed the applicable Research Budget or Additional Research Budget, CRISPR may include such excess costs in the applicable Cost Report, and Vertex will reimburse such excess costs, [***].

7.4.4 Notwithstanding anything to the contrary contained herein, except as may be otherwise provided in a Joint Development & Commercialization Agreement, Vertex will not be obligated to reimburse CRISPR for any Research Costs incurred in connection with the Research of a Shared Product following Option Exercise for the relevant Collaboration Program.

7.5 Royalties.

7.5.1 Royalty Rates. Subject to Sections 7.5.2, 7.5.3 and 7.5.4, on a Product-by-Product and country-by-country basis, Vertex will pay CRISPR royalties based on the aggregate Net Sales of each Product sold by Vertex, its Affiliates or Sublicensees in the Field in the Territory during a Calendar Year at the rates set forth in the table below; *provided*, that Vertex will have no obligation under this Section 7.5.1 with respect to any Shared Product. The obligation to pay royalties will be imposed only once with respect to the same unit of a Product.

Calendar Year Net Sales (in Dollars) for such Product in the Territory	**Royalty Rates as a Percentage (%) of Net Sales**
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

7.5.2 Royalty Term. Vertex will pay royalties to CRISPR under this Section 7.5 on a Product-by-Product and a country-by-country basis during the Royalty Term. Upon the expiration of the Royalty Term for a given Product in a given country, the Exclusive License with respect to such Product will become fully-paid, perpetual and irrevocable.

7.5.3 [***]Generic Competition. If one or more Generic Products with respect to a Product is marketed and sold in a given country by one or more Third Parties during any Calendar Quarter during the Royalty Term and the [***] of such Product sold during such Calendar Quarter have [***] relative to average quarterly sales ([***]) of such Product in such country during the [***] Calendar Quarters immediately prior to the Calendar Quarter during which such Generic Product(s) was first marketed and sold in such country, then the royalty rate for such Product in such country, on a Product-by-Product and country-by-country basis, will thereafter be [***] of the applicable royalty rate set forth in Section 7.5.1 for so long as such reduction in [***] persists.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

7.5.4 Third Party Licenses. Vertex may [***] from the royalties payable to CRISPR under this Section 7.5 the following amounts: (a) [***]; (b) [***]; and (c) [***]; *provided*, *however*, that in no event will the royalties that would otherwise be payable to CRISPR, as reduced by Section 7.5.3 [***] under this Section 7.5.4; and *provided further*, that Vertex will be entitled to [***] any amounts with respect to which Vertex would have been [***] pursuant to this Section 7.5.4 but [***] in this Section 7.5.4.

7.5.5 [***]. If, at the time any royalties are payable pursuant to Section 7.5, [***].

7.5.6 Royalty Reports. During the Agreement Term, following the first sale of a Product (other than a Shared Product) giving rise to Net Sales, within [***] after the end of each Calendar Quarter, Vertex will deliver a report to CRISPR specifying on a Product-by-Product and country-by-country basis: (a) gross sales in the relevant Calendar Quarter, (b) Net Sales in the relevant Calendar Quarter, including an accounting of deductions applied to determine Net Sales; (c) a summary of the then-current exchange rate methodology then in use by Vertex, and (d) royalties payable on such Net Sales. All royalty payments due under Section 7.5 for each Calendar Quarter will be due and payable within [***] after Vertex's delivery of the applicable report under this Section 7.5.5.

7.6 CRISPR In-License Agreements; [***].

7.6.1 CRISPR In-License Agreements. Certain of the Licensed Technology Controlled by CRISPR or CRISPR Affiliates as of the Effective Date was in-licensed or acquired by CRISPR under the agreements with Third Party licensors or sellers listed on Schedule H (such agreements, together with each consent and agreement obtained by CRISPR pursuant to Section 9.3.10, the "**CRISPR In-License Agreements**"). Subject to Section 10.1, [***].

7.6.2 [***].

(a) Certain Licensed Technology [***] during the Term pursuant to [***]. For any [***] pursuant to which [***], CRISPR will use Commercially Reasonable Efforts to ensure that [***] with the same [***] (including the right for Vertex [***] would be [***] and [***], [***] and other potential or actual [***]. If CRISPR is [***], (a) CRISPR will so notify Vertex, and the Parties will [***] and (b) CRISPR will not [***].

(b) Notwithstanding anything to the contrary contained herein, if, following Vertex's exercise of the Option for a particular Collaboration Target, Vertex believes, in its reasonable judgment, that it may be necessary to obtain rights under any Patent having claims which Cover Licensed Agents or Products that are the subject of the Option, Vertex shall have the right to negotiate a license to such Patent.

7.6.3 [***]. Vertex shall [***] by Vertex, its Affiliates or Sublicensees. If the [***] based on the [***] across such [***] by Vertex, its Affiliates or Sublicensees. [***] with and to the extent [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

7.6.4 [***]. Subject to Section [***], [***] arising under any [***]. [***] shall take into consideration the [***]. [***], the matter shall [***]. [***] if and when such [***].

7.6.5 [***]. If CRISPR [***] which provides [***] set forth on [***], then, [***], [***]

7.6.6 [***]. Notwithstanding the foregoing provisions of this Section 7.6, Vertex may [***] with respect to one or more [***] and, thereafter, [***].

7.7 Payment Method; Currency.

7.7.1 All payments under this Agreement will be paid in U.S. Dollars, by wire transfer to an account designated by CRISPR (which account CRISPR may update from time to time in writing).

7.7.2 If any amounts that are relevant to the determination of amounts to be paid under this Agreement or any calculations to be performed under this Agreement are denoted in a currency other than U.S. Dollars, then such amounts will be converted to their U.S. Dollar equivalent using Vertex's then-current standard procedures and methodology, including its then-current standard exchange rate methodology for the translation of foreign currency expenses into U.S. Dollars or, in the case of Sublicensees, such similar methodology, consistently applied.

7.8 Withholding Tax. Where any sum due to be paid to CRISPR hereunder is subject to any withholding or similar tax, Vertex will pay such withholding or similar tax to the appropriate Government Authority and deduct the amount paid from the amount then due CRISPR, in a timely manner and promptly transmit to CRISPR an official tax certificate or other evidence of such withholding sufficient to enable CRISPR to claim such payment of taxes. The Parties agree to cooperate with one another and use reasonable efforts to reduce or eliminate tax withholding or similar obligations in respect of royalties, milestone payments, and other payments made by Vertex to CRISPR under this Agreement. CRISPR will provide Vertex any tax forms that may be reasonably necessary in order for Vertex not to withhold tax or to withhold tax at a reduced rate under an applicable bilateral income tax treaty. Each Party will provide the other with reasonable assistance to enable the recovery, as permitted by Applicable Laws, of withholding taxes, value added taxes, or similar obligations resulting from payments made under this Agreement, such recovery to be for the benefit of the Party bearing such withholding tax or value added tax.

7.9 Records. During the Agreement Term, Vertex will keep and maintain accurate and complete records regarding Net Sales during the [***] preceding Calendar Years and CRISPR will keep and maintain accurate and complete records regarding the Research Cost covering the [***] preceding Calendar Years. Upon [***] prior written notice from the other Party (the "**Auditing Party**"), the Party required to maintain such records (as applicable, the "**Audited Party**") will permit an independent certified public accounting firm of internationally recognized standing, selected by the Auditing Party and reasonably acceptable to the Audited Party, to examine the relevant books and records of the Audited Party and its Affiliates, as may be reasonably necessary to verify the royalty reports submitted by Vertex in accordance with Section 7.5.5, or Research Cost reported by CRISPR in accordance with Section 7.4, as

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

applicable. An examination by the Auditing Party under this Section 7.9 will occur not more than [***] in any Calendar Year and will be limited to the pertinent books and records for any Calendar Year ending not more than [***] before the date of the request. The accounting firm will be provided access to such books and records at the Audited Party's facility or facilities where such books and records are normally kept and such examination will be conducted during the Audited Party's normal business hours. The Audited Party may require the accounting firm to sign a customary non-disclosure agreement before providing the accounting firm access to its facilities or records. Upon completion of the audit, the accounting firm will provide both the Auditing Party and the Audited Party a written report disclosing whether the reports submitted by Vertex, or the Research Cost reported by CRISPR, as applicable, are correct or incorrect and the specific details concerning any discrepancies. No other information will be provided to the Auditing Party. If the report or information submitted by the Audited Party results in an underpayment or overpayment, the Party owing underpaid or overpaid amount will promptly pay such amount to the other Party, and, if, as a result of such inaccurate report or information, such amount is more than [***] of the amount that was owed the Audited Party will reimburse the Auditing Party for the reasonable expense incurred by the Auditing Party in connection with the audit.

7.10 Late Payment. Any payments or portions thereof due hereunder that are not paid when due will accrue interest from the date due until paid at an annual rate equal to [***] (or the maximum allowed by Applicable Law, if less).

ARTICLE 8
INTELLECTUAL PROPERTY

8.1 Ownership; Assignment. For the avoidance of doubt, the rights and obligations of the Parties under this ARTICLE 8 are subject to and limited by any applicable Third Party Obligations to the extent the provisions of such obligations or agreements are specifically disclosed to Vertex in writing (or via electronic data room) (a) with respect to Third Party Obligations existing as of the Effective Date, prior to the Effective Date, (b) with respect to Third Party Obligations arising between the Effective Date and the delivery of the relevant Option Exercise Data Package, at the time of delivery of the Option Exercise Data Package and (c) with respect to Third Party Obligations arising after the date the applicable Exclusive License is granted hereunder, on or prior to the date on which such Third Party Obligations arise.

8.1.1 CRISPR Technology and Vertex Technology. As between the Parties, CRISPR will own and retain all of its rights, title and interest in and to the CRISPR Background Know-How, CRISPR Background Patents and CRISPR Platform Technology Patents and Vertex will own and retain all of its rights, title and interest in and to any Vertex Background Know-How and Vertex Background Patents, subject to any assignments, rights or licenses expressly granted by one Party to the other Party under this Agreement.

8.1.2 Agreement Technology.

(a) As between the Parties, CRISPR will be the sole owner of any Know-How discovered, developed, invented or created solely by CRISPR or its Affiliates or Third Parties acting on their behalf in connection with activities under this Agreement

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

("**CRISPR Program Know-How**") and any Patents that cover or claim such Know-How ("**CRISPR Program Patents**" and together with the CRISPR Program Know-How, the "**CRISPR Program Technology**"), and will retain all of its rights, title and interest thereto, subject to any assignment, rights or licenses expressly granted by CRISPR to Vertex under this Agreement.

(b) As between the Parties, Vertex will be the sole owner of any Know-How discovered, developed, invented or created solely by Vertex or its Affiliates or Third Parties acting on their behalf in connection with activities under this Agreement ("**Vertex Program Know-How**") and any Patents that cover or claim Vertex Program Know-How ("**Vertex Program Patents**" and together with the Vertex Program Know-How, the "**Vertex Program Technology**"), and will retain all of its rights, title and interest thereto, subject to any rights or licenses expressly granted by Vertex to CRISPR under this Agreement.

(c) (i) [***]: Any Know-How discovered, developed, invented or created jointly under this Agreement by both (a) Vertex, its Affiliates or Third Parties acting on Vertex's behalf and (b) CRISPR, its Affiliates or Third Parties acting on CRISPR's behalf, while conducting activities under this Agreement, to the extent [***] ("**[***] Joint Program Know-How**"), and any Patents that [***] ("**[***] Joint Program Patents,**" and together with the [***] Joint Program Know-How, the "**[***] Joint Program Technology**"), will be owned [***], including all rights, title and interest thereto, subject to any assignment, rights or licenses expressly granted by one Party to the other Party under this Agreement. Except as expressly provided in this Agreement, [***] with respect to, or to [***] Joint Program [***], and each Party hereby [***].

(ii) [***]: All [***] Joint Program Know-How, [***] Joint Program Patents, and [***] Joint Program Technology, in each case to the extent pertaining to [***], will be [***]. Within [***], [***] will, and hereby [***], [***] or [***] designated Affiliates, [***] Joint Program Patents. [***] will take all actions and provide [***] with all [***] and will [***].

(d) Any Know-How discovered, developed, invented or created jointly under this Agreement by both (a) Vertex, its Affiliates or Third Parties acting on Vertex's behalf and (b) CRISPR, its Affiliates or Third Parties acting on CRISPR's behalf, while conducting activities under this Agreement, to the extent pertaining to [***] but not exclusively pertaining to [***] ("**[***] Joint Program Know-How**"), and any Patents that claim or cover such [***] Joint Program Know-How ("**[***] Joint Program Patents,**" and together with the [***] Joint Program Know-How, the "**[***] Joint Program Technology**"), will be [***]. [***] will, and hereby does, assign to [***] or one or more of its designated Affiliates, [***] ownership interest in all [***] Joint Program Patents. Within [***], [***]will take all actions and provide [***] with all reasonably requested assistance to effect such assignment and will execute any and all documents necessary to perfect such assignment. Any Patents [***] under this Section [***]. In addition, [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(e) Any Know-How discovered, developed, invented or created jointly under this Agreement by both (a) Vertex, its Affiliates or Third Parties acting on Vertex's behalf and (b) CRISPR, its Affiliates or Third Parties acting on CRISPR's behalf, while conducting activities under this Agreement, that is not [***] Joint Program Know-How or [***] Joint Program Know-How (the "**Other Joint Program Know-How**"), and any Patents that solely claim or cover such Other Joint Program Know-How (the "**Other Joint Program Patents,**" and together with the Other Joint Program Know-How, the "**Other Joint Program Technology**"), will be [***], including all rights, title and interest thereto, subject to any assignment, rights or licenses expressly granted by one Party to the other Party under this Agreement. Except as expressly provided in this Agreement, neither Party will have any obligation [***] with respect to, or to [***], Other Joint Program Technology by reason of [***] thereof, and each Party [***] the laws of any jurisdiction [***]. If such [***], each Party [***] to the [***] without [***] other Party. Notwithstanding the foregoing, if either Party [***] such Other Joint Program Technology, it shall [***] of the other Party, such [***].

(f) CRISPR will promptly disclose to Vertex in writing, and will cause its Affiliates to so disclose, the discovery, development, invention or creation of any CRISPR Program Technology under this Agreement. In addition, each Party will promptly disclose to the other Party in writing, and will cause its Affiliates to so disclose, the discovery, development, invention or creation of any Joint Program Technology under this Agreement.

8.1.3 [***] CRISPR Product-Specific Patents to [***].

(a) Within [***] following the exercise of an Option by Vertex, if not previously completed by [***], CRISPR will [***], including without limitation a [***] as defined below, or as a new case to be determined by [***], consisting of [***] for the [***] that are [***] (each such [***]). Upon Vertex's exercise of an Option, all [***] will no longer be [***] and will thereafter be [***].

(b) Effective upon and following Vertex's exercise of the Option for a particular Collaboration Target, CRISPR will, and hereby does, [***] related to [***] that are [***] (whether [***]), and thereafter [***] will have [***]. CRISPR will take all actions and provide Vertex with [***] and will [***]. Any [***] under this Section 8.1.3(b) will be excluded [***] but will be included in the [***] for purposes of determining the [***].

8.1.4 [***] CRISPR. Effective upon [***] pursuant to Section 8.1.3, Vertex will, [***], [***] any such [***] to (a) conduct activities [***], (b) conduct [***] and

(a) [***].

8.2 Prosecution and Maintenance of Patents. The Parties hereby agree as follows with respect to the Prosecution and Maintenance of certain Patents, for the avoidance of doubt, in each case, subject to Third Party Obligations.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

8.2.1 CRISPR Platform Technology Patents. Anything herein to the contrary notwithstanding, and subject to Section 8.2.5, CRISPR will control and be responsible for all aspects of the Prosecution and Maintenance of the CRISPR Platform Technology Patents.

8.2.2 CRISPR Patents. CRISPR will control and be responsible for all aspects of the Prosecution and Maintenance of CRISPR Background Patents, CRISPR Program Patents, [***] Patents and [***] Program Patents. CRISPR will use Commercially Reasonable Efforts to Prosecute and Maintain all CRISPR Background Patents, CRISPR Program Patents, [***] Patents, other Joint Program Patents if applicable, and [***] Joint Program Patents, in each case to the extent Covering Licensed Agents or Products directed to particular Collaboration Targets using counsel reasonably acceptable to Vertex. In advance of Option Exercise for a particular Collaboration Target (*i.e.*, during the course of and in connection with each Research Plan conducted by the Parties under this Agreement), (a) CRISPR will undertake the Prosecution and Maintenance of one or more patent applications which could claim [***] Claims to the extent permitted by applicable law (each such Patent a "**[***] Patent**") and (b) prior to the filing of any Patent application that Covers Licensed Agents or Products, the Patent Coordinators will meet and in good faith discuss the best strategy for such filing (which, for clarity may [***] Patents). The Parties will use good faith efforts to agree on such strategy, with the goal of maximizing the value of the Parties' respective patent portfolios.

8.2.3 Vertex Patents. Vertex will control and be responsible for all aspects of the Prosecution and Maintenance of all Vertex Background Patents, Vertex Program Patents, [***] and [***] Joint Program Patents. Vertex will use Commercially Reasonable Efforts to Prosecute and Maintain all [***] Patents and [***] Joint Program Patents, if applicable, using counsel reasonably acceptable to CRISPR.

8.2.4 Other Joint Program Patents. The Parties will discuss and agree upon an allocation of responsibility for the prosecution and maintenance of the Other Joint Program Patents.

8.2.5 Other Matters Pertaining to Prosecution and Maintenance of Patents.

(a) Each Party will keep the other Party informed through their respective Patent Coordinators as to material developments with respect to the Prosecution and Maintenance of the CRISPR Platform Technology Patents, CRISPR Background Patents, CRISPR Program Patents, [***] Patents and Joint Program Patents for which such Party has responsibility for Prosecution and Maintenance pursuant to this Section 8.2, including by providing copies of any office actions or office action responses or other correspondence that such Party provides to or receives from any patent office, including notice of all interferences, reissues, re-examinations, or oppositions, and all patent-related filings, and by providing the other Party the timely opportunity to have reasonable input into the strategic aspects of such Prosecution and Maintenance.

(b) If, during the Agreement Term, Vertex intends to abandon patent applications for any Patent that Vertex is responsible for Prosecuting and Maintaining under Section 8.2.3 (excluding Vertex Background Patents and Vertex Program Patents that Cover technology other than Licensed Agents and Products, but including, for the

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

avoidance of doubt, [***] Patents) in a particular country, then Vertex will so notify CRISPR of such intention at least [***] before such Patent will become abandoned, and CRISPR will have the right, but not the obligation, to assume responsibility for the Prosecution and Maintenance thereof at its own expense with counsel of its own choice.

(c) If, during the Agreement Term, CRISPR intends to abandon any CRISPR Background Patent (excluding any CRISPR Platform Technology Patents), CRISPR Program Patent, [***] Patent, [***] Joint Program Patent or Other Joint Program Patent Covering a Licensed Agent or Product that CRISPR is responsible for Prosecuting and Maintaining in a particular country, then, if Vertex's right to obtain an Exclusive License to such Patent or have such Patent assigned pursuant to Section 8.1.3, as applicable, has not expired or terminated, CRISPR will notify Vertex of such intention at least [***] before such Patent will become abandoned, and Vertex will have the right, but not the obligation, to assume responsibility for the Prosecution and Maintenance thereof at its own expense with counsel of its own choice.

8.3 Patent Coordinators. Each Party will appoint a patent coordinator reasonably acceptable to the other Party (each, a "**Patent Coordinator**") to serve as such Party's primary liaison with the other Party on matters relating to the Prosecution and Maintenance and enforcement of Licensed Patents and Joint Program Patents. The Patent Coordinators will meet in person or by means of telephone or video conference at least once each Calendar Quarter during the Agreement Term. Each Party may replace its Patent Coordinator at any time by providing notice in writing to the other Party. The initial Patent Coordinators will be:

For Vertex: Kerry Flynn

For CRISPR: Tyler Dylan-Hyde

8.4 Patent Costs. Patent Costs arising after the Effective Date will be borne by the Parties as provided in Schedule K for the relevant period (*i.e.*, before or after Option Exercise) except as otherwise set forth in the Joint Development & Commercialization Agreement.

8.5 Defense of Claims Brought by Third Parties. If a Third Party initiates a Proceeding against either Party claiming a Patent owned by or licensed to such Third Party is infringed by the Research, Development, Manufacture or Commercialization of a Licensed Agent or Product, each Party that is named as a defendant in such Proceeding will have the right to defend itself in such Proceeding. The other Party will reasonably assist the defending Party in defending such Proceeding and cooperate in any such litigation at the request and expense of the defending Party. The defending Party will provide the other Party with prompt written notice of the commencement of any such Proceeding and will keep the other Party apprised of the progress of such Proceeding and will promptly furnish the other Party with a copy of each communication relating to the alleged infringement that is received by such Party. If both Parties are named as defendants in any Proceeding, both Parties may defend such Proceeding and the Parties will reasonably cooperate with respect to such defense.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

8.6 Enforcement of Patents Against Competitive Infringement.

8.6.1 Duty to Notify of Competitive Infringement. If either Party learns of an infringement, unauthorized use, misappropriation or threatened infringement by a Third Party with respect to any Licensed Patents by reason of the making, using, offering to sell, selling or importing of (a) a product containing [***] or (b) the resulting [***] by such [***] (a "**Competitive Infringement**") or any other infringement, unauthorized use, misappropriation or threatened infringement by a Third Party with respect to any CRISPR Platform Technology Patent, such Party will promptly notify the other Party in writing and will provide such other Party with available information regarding such Competitive Infringement or other infringement.

8.6.2 Prior to License Grant. For any Competitive Infringement with respect to a Licensed Agent or Product pertaining to a Collaboration Target that is then subject to an Option, which Competitive Infringement occurs after the Effective Date but before the date Vertex is granted the Exclusive License with respect to such Licensed Agent or Product, CRISPR will have the first right, but not the obligation, to institute, prosecute, and control a Proceeding with respect thereto, by counsel of its own choice. Vertex will have the right to engage counsel of its own choice in connection with such Proceeding at its own expense but shall not be permitted to become party to such Proceeding unless required by Applicable Law. CRISPR will provide Vertex with prompt written notice of the commencement of any such Proceeding, and CRISPR will keep Vertex apprised of the progress of such Proceeding. Notwithstanding anything the contrary contained herein, CRISPR will at all times have the sole right to institute, prosecute, and control any Proceeding under this Section 8.6.2 to the extent involving any CRISPR Platform Technology Patents but will (a) keep Vertex reasonably apprised of the progress of such Proceeding, (b) reasonably consider Vertex's comments with respect to the conduct of such Proceeding and (c) not enter a settlement, consent judgment or other voluntary final disposition of a Proceeding that disclaims, limits the scope of, admits the invalidity or unenforceability of, or grants a license, covenant not to sue or similar immunity that has an adverse effect on Vertex's rights hereunder with respect to, a CRISPR Platform Technology Patent without Vertex's prior written consent, not to be unreasonably withheld.

8.6.3 Following License Grant. For any Competitive Infringement with respect to a particular Licensed Agent or Product occurring after the date Vertex is granted the Exclusive License with respect to such Licensed Agent or Product, Vertex will have the first right, but not the obligation, to institute, prosecute, and control a Proceeding with respect to such Competitive Infringement by counsel of its own choice at its own expense, and CRISPR will have the right, at its own expense, to be represented in that action by counsel of its own choice; *provided* that in such Proceeding, Vertex shall reasonably consider CRISPR's comments with respect to which Patents to seek to enforce against such infringing party, taking into consideration the overall value of the Patents Covering the relevant Licensed Agent or Product to CRISPR and its licensees. If Vertex fails to initiate a Proceeding within a period of [***] after written notice of such Competitive Infringement is first provided by a Party under Section 8.6.1, CRISPR will have the right to initiate and control a Proceeding with respect to such Competitive Infringement by counsel of its own choice, and Vertex will have the right to be represented in any such action by counsel of its own choice at its own expense; *provided*, that if Vertex notifies CRISPR during such [***] period that it is electing in good faith not to institute any Proceeding against such Competitive Infringement for strategic reasons intended to maintain the commercial value of the relevant Patent and any Licensed Agent or Product Covered thereby, CRISPR will not have the right to initiate and control any Proceeding with respect to such Competitive Infringement.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Notwithstanding anything to the contrary contained herein, CRISPR will at all times have the sole right to institute, prosecute, and control any Proceeding under this Section 8.6.3 to the extent involving any CRISPR Platform Technology Patents but will (a) keep Vertex reasonably apprised of the progress of such Proceeding, (b) reasonably consider Vertex's comments with respect to the conduct of such Proceeding and (c) not enter a settlement, consent judgment or other voluntary final disposition of a Proceeding that disclaims, limits the scope of, admits the invalidity or unenforceability of, or grants a license, covenant not to sue or similar immunity that has an adverse effect on Vertex's rights hereunder with respect to, a CRISPR Platform Technology Patent without Vertex's prior written consent, not to be unreasonably withheld.

8.6.4 Joinder.

(a) If a Party initiates a Proceeding in accordance with this Section 8.6 or Section 8.7 the other Party agrees to be joined as a party plaintiff where necessary and to give the first Party reasonable assistance and authority to file and prosecute the Proceeding. Subject to Section 8.6.5, the costs and expenses of each Party incurred pursuant to this Section 8.6.4 will be borne by the Party initiating such Proceeding. CRISPR agrees to use Commercially Reasonable efforts to cause Third Parties to be joined as a party plaintiff where necessary.

(b) If one Party initiates a Proceeding in accordance with this Section 8.6, the other Party may join such Proceeding as a party plaintiff where necessary for such other Party to seek lost profits with respect to such infringement.

8.6.5 Share of Recoveries. Any damages or other monetary awards recovered with respect to a Proceeding brought pursuant to this Section 8.6 will be shared as follows:

(a) the amount of such recovery will first [***]; then

(b) any remaining proceeds constituting direct or actual damages for acts of infringement occurring prior to the date Vertex is granted the Exclusive License with respect to the relevant Licensed Agent or Product [***];

(c) any remaining proceeds constituting direct or actual damages for acts of infringement occurring after the date Vertex is granted the Exclusive License with respect to the relevant Licensed Agent or Product [***]; and

(d) any remaining proceeds constituting punitive or treble damages will be allocated between the Parties as follows: [***].

Notwithstanding the foregoing, any Out-of Pocket Costs incurred in connection with a Proceeding with respect to a Shared Product shall be included in the Other-Out-of-Pocket Costs (as defined in Schedule G) and the proceeds of such proceeding shall be deemed Net Sales for purposes of determining the Net Profit or Net Loss (each, as defined in Schedule G).

8.6.6 Settlement. Notwithstanding anything to the contrary under this ARTICLE 8, neither Party may enter a settlement, consent judgment or other voluntary final

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

disposition of a suit under this ARTICLE 8 that disclaims, limits the scope of, admits the invalidity or unenforceability of, or grants a license, covenant not to sue or similar immunity under a Patent Controlled by the other Party or its Affiliates without first obtaining the written consent of the Party that Controls the relevant Patent; *provided* that the foregoing limitation shall not apply to CRISPR's rights

with respect to the CRISPR Platform Technology Patents (subject to the restriction set forth in Sections 8.6.2 and 8.6.3).

8.7 Other Infringement.

8.7.1 Joint Program Patents. With respect to the infringement of a Joint Program Patent that is not a Competitive Infringement, the Parties will cooperate in good faith to bring suit together against such infringing party or the Parties may decide to permit one Party to solely bring suit. Any damages or other monetary awards recovered with respect to a Proceeding brought pursuant to this Section 8.7.1 will be shared as follows: (a) the amount of such recovery [***]; then (b) any remaining proceeds will be allocated as follows: (i) [***]; and (ii) [***].

8.7.2 Patents Solely Owned by CRISPR. CRISPR will retain all rights to pursue an infringement of any Patent solely owned by CRISPR that is not a Competitive Infringement and CRISPR will retain all recoveries with respect thereto.

8.7.3 Patents Solely Owned by Vertex. Vertex will retain all rights to pursue an infringement of any Patent solely owned by Vertex and Vertex will retain all recoveries with respect thereto.

8.8 Patent Listing. Following Vertex's exercise of the Option for a Collaboration Target, Vertex will have the sole right, but not the obligation, to submit to all applicable Regulatory Authorities patent information pertaining to each applicable Product pursuant to 21 U.S.C. § 355(b)(1)(G) (or any amendment or successor statute thereto), any similar statutory or regulatory requirement enacted in the future regarding biologic products, or any similar statutory or regulatory requirement in any non-U.S. country or other regulatory jurisdiction; *provided* that Vertex shall not be permitted to provide any such information with respect to CRISPR Platform Technology Patents without CRISPR's prior written consent.

8.9 CREATE Act. Notwithstanding anything to the contrary in this ARTICLE 8, neither Party will have the right to make an election under the CREATE Act when exercising its rights under this ARTICLE 8 without the prior written consent of the other Party, which will not be unreasonably withheld, conditioned or delayed. With respect to any such permitted election, the Parties will use reasonable efforts to cooperate and coordinate their activities with respect to any submissions, filings or other activities in support thereof. The Parties acknowledge and agree that this Agreement is a "**joint research agreement**" as defined in the CREATE Act.

8.10 Additional Right and Exceptions. Notwithstanding any provision of this ARTICLE 8, CRISPR retains the sole right to Prosecute and Maintain CRISPR Platform Technology Patents and to control any enforcement of CRISPR Platform Technology Patents, subject to the restrictions set forth in Sections 8.6.2 and 8.6.3.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

8.11 Patent Term Extension. The Parties will cooperate with each other in obtaining patent term restoration in any country in the Territory under any statute or regulation equivalent or similar to 35 U.S.C. § 156, where applicable to a Product. After the date Vertex is granted the Exclusive License with respect to a Product, [***] Vertex Background Patents, [***] Patents, Vertex Program Patents, [***] Joint Program Patents, Joint Program Patents and [***] Joint Program Patents [***]. CRISPR will abide by Vertex's determination and cooperate, as reasonably requested by Vertex, in connection with the foregoing (including by providing appropriate information and executing appropriate documents).

8.12 Recording. If Vertex deems it necessary or desirable to register or record this Agreement or evidence of this Agreement with any patent office or other appropriate Governmental Authority in one or more jurisdictions in the Territory, CRISPR will reasonably cooperate to execute and deliver to Vertex any documents accurately reflecting or evidencing this Agreement that are necessary or desirable, in Vertex's reasonable judgment, to complete such registration or recordation. Vertex will reimburse CRISPR for all reasonable Out-of-Pocket Costs, including attorneys' fees, incurred by CRISPR in complying with the provisions of this Section 8.12.

ARTICLE 9
REPRESENTATIONS AND WARRANTIES

9.1 Representations and Warranties of Vertex. Vertex hereby represents and warrants to CRISPR, as of the Effective Date, that:

9.1.1 each of Vertex Parent and Vertex UK are duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization and has full corporate power and authority to enter into this Agreement and to carry out the provisions hereof;

9.1.2 each of Vertex Parent and Vertex UK (a) has the requisite power and authority and the legal right to enter into this Agreement and to perform its obligations hereunder and (b) has taken all requisite action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

9.1.3 each of Vertex Parent and Vertex UK has the requisite resources and expertise to perform its obligations hereunder;

9.1.4 this Agreement has been duly executed and delivered on behalf of each of Vertex Parent and Vertex UK, and constitutes a legal, valid and binding obligation, enforceable against each of Vertex Parent and Vertex UK in accordance with the terms hereof;

9.1.5 the execution, delivery and performance of this Agreement by each of Vertex Parent and Vertex UK will not constitute a default under or conflict with any agreement, instrument or understanding, oral or written, to which either entity is a party or by which either entity is bound, or violate any law or regulation of any court, governmental body or administrative or other agency having jurisdiction over Vertex Parent or Vertex UK; and

9.1.6 each of Vertex Parent and Vertex UK has obtained all necessary consents, approvals and authorizations of all Governmental Authorities and other Persons or entities required to be obtained by it in connection with the execution and delivery of this Agreement.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

9.2 Representations and Warranties of CRISPR. Each of the CRISPR Entities, jointly and severally, hereby represents and warrants to Vertex, as of the Effective Date, that, except as otherwise set forth on Schedule L:

9.2.1 Each of CRISPR AG, CRISPR Inc., CRISPR UK and Tracr are duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization and has full corporate power and authority to enter into this Agreement and to carry out the provisions hereof;

9.2.2 Each of CRISPR AG, CRISPR Inc., CRISPR UK and Tracr (a) has the requisite power and authority and the legal right to enter into this Agreement and to perform its obligations hereunder and (b) has taken all requisite action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

9.2.3 [***], each of CRISPR AG, CRISPR Inc., CRISPR UK and Tracr has the requisite resources and expertise to perform its obligations hereunder;

9.2.4 this Agreement has been duly executed and delivered on behalf of CRISPR, and constitutes a legal, valid and binding obligation, enforceable against it in accordance with the terms hereof;

9.2.5 the execution, delivery and performance of this Agreement by CRISPR will not constitute a default under or conflict with any agreement, instrument or understanding, oral or written, to which it is a party or by which it is bound, or violate any law or regulation of any court, governmental body or administrative or other agency having jurisdiction over it;

9.2.6 CRISPR has obtained all necessary consents, approvals and authorizations of all Governmental Authorities and other Persons or entities required to be obtained by CRISPR in connection with the execution and delivery of this Agreement;

9.2.7 the Licensed Technology constitutes all of the Patents and Know-How Controlled by CRISPR that are necessary to Research, Develop, Manufacture or Commercialize Licensed Agents and Products contemplated under the Collaboration Programs in the Field;

9.2.8 CRISPR is the sole and exclusive owner or exclusive licensee of the [***], all of which are free and clear of any liens, charges and encumbrances, and, as of the Effective Date, neither any license granted by CRISPR to any Third Party, nor any license granted by any Third Party to CRISPR conflicts with the license grants to Vertex hereunder (or the Exclusive License to be granted to Vertex upon Option Exercise) and CRISPR is entitled to grant all rights and licenses (or sublicenses, as the case may be) under such Patents it purports to grant to Vertex under this Agreement and the Exclusive Licenses to be granted to Vertex upon Option Exercise;

9.2.9 Schedule L sets forth a true, correct and complete list of all CRISPR Platform Technology Patents and CRISPR Background Patents as of the Effective Date and

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

indicates (a) whether each such Patent is a [***] or a [***] and (b) whether such Patent is owned by CRISPR or licensed by CRISPR from a Third Party and if so, identifies the licensor or sublicensor from which the Patent is licensed;

9.2.10 CRISPR has independently developed all Licensed Technology or otherwise has a valid right to use, and to permit Vertex, Vertex's Affiliates and Vertex's Sublicensees to use, the Licensed Technology for all permitted purposes under this Agreement;

9.2.11 the CRISPR Background Know-How is free and clear of liens, charges or encumbrances other than licenses granted to Third Parties that are not inconsistent with the rights and licenses granted to Vertex hereunder;

9.2.12 the CRISPR Platform Technology Patents and CRISPR Background Patents, are, or, upon issuance, will be, valid and enforceable patents and no Third Party [***], (a) is infringing any such Patents or (b) has challenged the extent, validity or enforceability of such Patents (including by way of example through the institution or written threat of institution of interference, nullity or similar invalidity proceedings before the United States Patent and Trademark Office or any analogous foreign Governmental Authority);

9.2.13 it has complied with all Applicable Laws, including any disclosure requirements of the United States Patent and Trademark Office or any analogous foreign Governmental Authority, in connection with the Prosecution and Maintenance of the CRISPR Platform Technology Patents and CRISPR Background Patents and has timely paid all filing and renewal fees payable with respect to any such Patents for which it controls Prosecution and Maintenance;

9.2.14 it has obtained assignments from the inventors of all inventorship rights relating to the [***] and [***] that it owns, and all such assignments of inventorship rights relating to such Patents are valid and enforceable;

9.2.15 except for the CRISPR In-License Agreements, there is no agreement between CRISPR (or any of its Affiliates) and any Third Party pursuant to which CRISPR has acquired Control of any of the Licensed Technology, and no Third Party has any right, title or interest in or to, or any license under, any of the Licensed Technology. All CRISPR In-License Agreements are in full force and effect and have not been modified or amended (except for amendments provided to Vertex prior to the Effective Date). Neither CRISPR nor, [***], the Third Party licensor in a CRISPR In-License Agreement is in default with respect to a material obligation under such CRISPR In-License Agreement, and neither such party has claimed or has grounds upon which to claim that the other party is in default with respect to a material obligation under, any CRISPR In-License Agreement;

9.2.16 CRISPR and its Affiliates have taken commercially reasonable measures consistent with industry practices to protect the secrecy, confidentiality and value of all CRISPR Background Know-How that constitutes trade secrets under Applicable Law (including requiring all employees, consultants and independent contractors to execute binding and enforceable agreements requiring all such employees, consultants and independent contractors to maintain the confidentiality of such CRISPR Background Know-How) and, [***], such CRISPR

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Background Know-How has not been used, disclosed to or discovered by any Third Party except pursuant to such confidentiality agreements and there has not been a breach by any party to such confidentiality agreements;

9.2.17 no Licensed Technology is subject to any funding agreement with any government or governmental agency;

9.2.18 [***], the Research, Development, Manufacture, use, sale, offer for sale, supply or importation by CRISPR or Vertex (or their respective Affiliates or Sublicensees) of a Licensed Agent or Product does not and will not infringe any issued patent of any Third Party or, if and when issued, any claim within any patent application of any Third Party;

9.2.19 there are no judgments or settlements against or owed by CRISPR [***], [***], pending or threatened claims or litigation, in either case relating to the Licensed Technology;

9.2.20 there is no action, claim, demand, suit, proceeding, arbitration, grievance, citation, summons, subpoena, inquiry or investigation of any nature, civil, criminal, regulatory or otherwise, in law or in equity, pending [***], [***], threatened against CRISPR, any of its Affiliates or any Third Party, in each case in connection with the Licensed Technology or relating to the transactions contemplated by this Agreement; and

9.2.21 CRISPR has not employed (and, [***], has not used a contractor or consultant that has employed) any Person debarred by the FDA (or subject to a similar sanction of EMA or foreign equivalent), or any Person that is the subject of an FDA debarment investigation or proceeding (or similar proceeding of EMA or foreign equivalent), in any capacity in connection with this Agreement.

9.3 CRISPR Covenants. Each of the CRISPR Entities, jointly and severally, hereby covenants to Vertex that, except as expressly permitted under this Agreement:

9.3.1 CRISPR will maintain and not breach any CRISPR In-License Agreements [***] that provide a grant of rights from such Third Party to CRISPR that are Controlled by CRISPR and are licensed or may become subject to a license from CRISPR to Vertex for a Licensed Agent or Product under this Agreement;

9.3.2 CRISPR will promptly notify Vertex of any material breach by one or more CRISPR Entities or a Third Party of any CRISPR In-License Agreements or [***] that provides a grant of rights from such Third Party to one or more CRISPR Entities and are licensed or may become subject to a license from CRISPR to Vertex to conduct Vertex Activities or for a Licensed Agent or Product under this Agreement, and in the event of a breach by [***], will [***]. CRISPR will [***] as soon as possible, but in no event later than the date on which [***];

9.3.3 it will not amend, modify or terminate any CRISPR In-License Agreement or [***] in a manner that would have an adverse effect on Vertex's rights hereunder without first obtaining Vertex's written consent, which consent may be withheld in Vertex's sole discretion;

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

9.3.4 it will not enter into any new agreement or other obligation with any Third Party, or amend an existing agreement with a Third Party, in each case that adversely restricts, limits or encumbers the rights granted to Vertex under this Agreement or the additional rights or licenses Vertex would acquire upon Option Exercise;

9.3.5 it will not, and will cause its Affiliates not to (a) license, sell, assign or otherwise transfer to any Person any Licensed Technology (or agree to do any of the foregoing), except as provided in Section 8.1.3 or except as will not adversely restrict, limit or encumber the rights granted to Vertex under this Agreement or the additional rights or licenses Vertex would acquire upon Option Exercise, or (b) incur or permit to exist, with respect to any Licensed Technology, any lien, encumbrance, charge, security interest, mortgage, liability, grant of license to Third Parties or other restriction (including in connection with any indebtedness);

9.3.6 it will use Commercially Reasonable Efforts to obtain and maintain the requisite resources and expertise to perform its obligations hereunder;

9.3.7 all employees and Subcontractors of CRISPR performing Research or Development activities hereunder on behalf of CRISPR will be obligated to assign to CRISPR all right, title and interest in and to any inventions developed by them, whether or not patentable, or, solely with respect to Subcontractors, grant exclusive license rights to CRISPR with a right to grant sublicenses through multiple tiers;

9.3.8 it will not engage, in any capacity in connection with this Agreement any Person who either has been debarred by the FDA, is the subject of a conviction described in Section 306 of the FD&C Act or is subject to any such similar sanction;

9.3.9 CRISPR will inform Vertex in writing promptly if it or any Person engaged by CRISPR or any of its Affiliates who is performing services under this Agreement or any ancillary agreements is debarred or is the subject of a conviction described in Section 306 of the FD&C Act, or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, to CRISPR's Knowledge, is threatened, relating to the debarment or conviction of CRISPR, any of its Affiliates or any such Person performing services hereunder or thereunder;

9.3.10 Within [***] after the Effective Date, [***] will take all actions necessary (including, without limitation, [***] to ensure [***], effective [***], which actions may include, without limitation, [***] and executing all documents necessary in connection therewith.

9.3.11 CRISPR shall use Commercially Reasonable Efforts (A) to, within [***] of the Effective Date, [***] directly or indirectly [***] that [***], that have [***] and that [***] and other intellectual property rights or (B) shall otherwise work together [***]. To the extent [***] execute such documents as are necessary to [***] and (ii) CRISPR shall [***] and the [***] shall be [***].

9.4 Vertex Covenants. Vertex hereby covenants to CRISPR that, except as expressly permitted under this Agreement:

9.4.1 it will use Commercially Reasonable Efforts to obtain and maintain the requisite resources and expertise to perform its obligations hereunder;

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

9.4.2 Vertex will not engage, in any capacity in connection with this Agreement any Person who either has been debarred by the FDA, is the subject of a conviction described in Section 306 of the FD&C Act or is subject to any such similar sanction; and

9.4.3 Vertex will inform CRISPR in writing promptly if it or any Person engaged by Vertex or any of its Affiliates who is performing services under this Agreement or any ancillary agreements is debarred or is the subject of a conviction described in Section 306 of the FD&C Act, or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, [***], is threatened, relating to the debarment or conviction of CRISPR, any of its Affiliates or any such Person performing services hereunder or thereunder.

9.5 Disclaimer. Except as otherwise expressly set forth in this Agreement, neither Party nor its Affiliates makes any representation or extends any warranty of any kind, either express or implied, including any warranty of merchantability or fitness for a particular purpose. Vertex and CRISPR understand that each Product is the subject of ongoing Research and Development and that neither Party can assure the safety, usefulness or commercial or technical viability of any Product.

ARTICLE 10
INDEMNIFICATION; INSURANCE

10.1 Indemnification by Vertex. Vertex will indemnify, defend and hold harmless CRISPR, each of its Affiliates, and each of its and its Affiliates' employees, officers, directors and agents (each, an "**CRISPR Indemnified Party**") from and against any and all liability, loss, damage, expense (including reasonable attorneys' fees and expenses) and cost (collectively, a "**Liability**") that the CRISPR Indemnified Party may be required to pay to one or more Third Parties to the extent resulting from or arising out of:

10.1.1 any claims of any nature arising out of the Research, Development, Manufacture, Commercialization or use of any Licensed Agent or Product by, on behalf of, or under the authority of, Vertex (other than by any CRISPR Indemnified Party), other than (a) claims by Third Parties relating to misappropriation of trade secrets or other intellectual property rights arising out of the exercise of rights under the Licensed Know-How, or (b) claims for which CRISPR is required to indemnify Vertex pursuant to Section 10.2; or

10.1.2 the material breach by Vertex of any of its representations, warranties or covenants set forth in this Agreement, except to the extent caused by the negligence or intentional acts of CRISPR or any CRISPR Indemnified Party.

10.2 Indemnification by CRISPR. Each CRISPR Entity will jointly and severally indemnify, defend and hold harmless Vertex, its Affiliates, Sublicensees, distributors and each of its and their respective employees, officers, directors and agents (each, a "**Vertex Indemnified Party**") from and against any and all Liabilities that the Vertex Indemnified Party may be required to pay to one or more Third Parties to the extent resulting from or arising out of:

10.2.1 the material breach by CRISPR (or any CRISPR Entity(ies)) of any of its representations, warranties or covenants set forth in this Agreement, except to the extent caused by the negligence or intentional acts of Vertex or any Vertex Indemnified Party; or

10.2.2 any claims of any nature arising out of the Research activities performed by CRISPR (or any CRISPR Entity(ies)) with respect to any Licensed Agent or Product prior to the Effective Date or during the Research Term, other than claims for which Vertex is required to indemnify CRISPR pursuant to Section 10.1.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

10.3 Procedure. Each Party will notify the other Party in writing if it becomes aware of a claim for which indemnification may be sought hereunder. In case any proceeding (including any governmental investigation) will be instituted involving any Party in respect of which indemnity may be sought pursuant to this ARTICLE 10, such Party (the "**Indemnified Party**") will give prompt written notice of the indemnity claim to the other Party (the "**Indemnifying Party**") and provide a copy to the Indemnifying Party of any complaint, summons or other written or verbal notice that the Indemnified Party receives in connection with any such claim. An Indemnified Party's failure to deliver written notice will relieve the Indemnifying Party of liability to the Indemnified Party under this ARTICLE 10 only to the extent such delay is prejudicial to the Indemnifying Party's ability to defend such claim. Provided that the Indemnifying Party is not contesting the indemnity obligation, the Indemnified Party will permit the Indemnifying Party to control any litigation relating to such claim and the disposition of such claim by negotiated settlement or otherwise and any failure to contest prior to assuming control will be deemed to be an admission of the obligation to indemnify. The Indemnifying Party will act reasonably and in good faith with respect to all matters relating to such claim and will not settle or otherwise resolve such claim without the Indemnified Party's prior written consent which will not be withheld, delayed or conditioned unreasonably other than settlements only involving the payment of monetary awards for which the Indemnifying Party will be fully-responsible. The Indemnified Party will cooperate with the Indemnifying Party in such Party's defense of any claim for which indemnity is sought under this Agreement, at the Indemnifying Party's sole cost and expense.

10.4 Insurance. Each Party will maintain, at its cost, reasonable insurance against liability and other risks associated with its activities contemplated by this Agreement and will furnish to the other Party evidence of such insurance upon request. Notwithstanding the foregoing, Vertex may self-insure to the extent that it self-insures for its other activities.

10.5 Limitation of Consequential Damages. Except for (a) claims of a Third Party that are subject to indemnification under this ARTICLE 10, (b) claims arising out of a Party's willful misconduct, or (c) a Party's breach of Section 2.13 or ARTICLE 12, neither Party nor any of its Affiliates will be liable to the other Party or its Affiliates for any incidental, consequential, special, punitive or other indirect damages or lost or imputed profits or royalties, lost data or cost of procurement of substitute goods or services, whether liability is asserted in contract, tort (including negligence and strict product liability), indemnity or contribution, and irrespective of whether that Party or any representative of that Party has been advised of, or otherwise might have anticipated the possibility of, any such loss or damage.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

ARTICLE 11
TERM; TERMINATION

11.1 Agreement Term; Expiration. This Agreement is effective as of the Effective Date and, unless earlier terminated pursuant to the other provisions of this ARTICLE 11, will continue in full force and effect until this Agreement expires as follows:

11.1.1 on a country-by-country and Product-by-Product basis, on the date of expiration of all payment obligations under this Agreement with respect to such Product in such country;

11.1.2 in its entirety upon the expiration of all payment obligations under this Agreement with respect to all Products in all countries pursuant to Section 11.1.1; and

11.1.3 in its entirety upon expiration of all Options if Vertex has not exercised any Option as provided in Section 4.1.1.

11.2 Termination of the Agreement.

11.2.1 Vertex's Termination for Convenience. Vertex will be entitled to terminate this Agreement as a whole, or terminate this Agreement in part with respect to a particular Collaboration Program, for convenience by providing CRISPR 90 days' written notice of such termination; *provided*, *however*, that if any termination under this Section 11.2.1 applies to a Product for which Vertex has received Marketing Approval, Vertex will provide CRISPR no less than 270 days' notice of such termination.

11.2.2 Termination Due to Failure to Obtain HSR Clearance. If the Parties make an HSR Filing with respect to a Collaboration Target under Section 4.1.2 and the HSR Clearance Date has not occurred on or prior to [***] after the effective date of the latest HSR Filing made by the Parties with respect to a Collaboration Target, this Agreement will terminate solely with respect to the applicable Collaboration Program at the election of either Party immediately upon notice to the other Party, if (a) the FTC or the DOJ has instituted (or threatened to institute) any action, suit or proceeding including seeking, threatening to seek or obtaining a preliminary injunction under the HSR Act against Vertex and CRISPR to enjoin or otherwise prohibit the transactions contemplated by this Agreement related to such proposed Collaboration Program, or (b) the Parties have not resolved any and all objections of the FTC and DOJ as contemplated by Section 4.1.2(b). Notwithstanding the foregoing, this Section 11.2.2 will not apply if an HSR Filing is not required for Vertex to receive the Exclusive License with respect to a Collaboration Target. If this Agreement is terminated pursuant to this Section 11.2.2 with respect to a particular Collaboration Target, such Collaboration Target will not count towards the Option Cap. If, following termination of this Agreement with respect to a Collaboration Target under this Section 11.2.2, CRISPR or any of its Affiliates or sublicensees Commercializes a Product for the relevant Collaboration Target, [***] of (i) [***] and (ii) [***].

11.2.3 [***]. The terms of Sections 1.117, 7.5.2, 7.5.5, 7.7, 7.8, 7.9 and 7.10 will apply with respect [***], *mutatis mutandis*.

11.2.4 Termination for Material Breach.

(a) Vertex's Right to Terminate. If CRISPR (or any CRISPR Entity(ies)) is in material breach of this Agreement, then Vertex may deliver notice of

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

such material breach to CRISPR. If the breach is curable, CRISPR will have [***] from the receipt of such notice to cure such breach. If either CRISPR fails to cure such breach within such [***] period or the breach is not subject to cure (a "**CRISPR Breach Event**"), Vertex may either (i) terminate this Agreement (A) if such breach relates solely relates to a particular Collaboration Program, with respect to the Collaboration Program affected by such breach (a "**CRISPR Program Breach**") or (B) if such breach relates to multiple Collaboration Programs or this Agreement as a whole (a "**CRISPR Agreement Breach**"), in its entirety, by providing written notice to CRISPR or (ii) elect to exercise the alternate remedy provisions set forth in Section 11.3 (in lieu of termination).

(b) CRISPR's Right to Terminate.

(i) If Vertex is in material breach of this Agreement, then CRISPR may deliver notice of such material breach to Vertex. If the breach is curable, Vertex will have [***] following receipt of such notice to cure such breach (except to the extent such breach involves the failure to make a payment when due, which breach must be cured within [***] following receipt of such notice). If Vertex fails to cure such breach within the [***] or [***] period, as applicable, or the breach is not subject to cure, CRISPR in its sole discretion may terminate this Agreement (i) if such breach relates solely relates to a particular Collaboration Program, with respect to the Collaboration Program affected by such breach or (ii) if such breach relates to multiple Collaboration Programs or this Agreement as a whole, in its entirety, by providing written notice to Vertex.

(ii) If Vertex (A) commences or actively and voluntarily participates in any action or proceeding (including any patent opposition or re-examination proceeding), or otherwise asserts any claim, challenging or denying the validity or enforceability of any claim of any Patent that is licensed to Vertex under this Agreement or (B) actively and voluntarily assists any other Person in bringing or prosecuting any action or proceeding (including any patent opposition or re-examination proceeding) challenging or denying the validity or enforceability of any claim of any Patent that is licensed to Vertex under this Agreement (each of (A) and (B), a "**Patent Challenge**"), then, to the extent permitted by Applicable Law, CRISPR shall have the right, in its sole discretion, to give notice to Vertex that CRISPR may terminate the license(s) granted under such Patent to Vertex [***] following such notice, and, unless Vertex withdraws or causes to be withdrawn all such challenge(s) (or in the case of *ex-parte* proceedings, multi-party proceedings, or other Patent Challenges that Vertex does not have the power to unilaterally withdraw or cause to be withdrawn), Vertex ceases assisting any other party to such Patent Challenge and, to the extent Vertex is a party to such Patent Challenge, it withdraws from such Patent Challenge within such [***] period, CRISPR shall have the right to terminate this Agreement by providing written notice thereof to Vertex. The foregoing right to terminate shall not apply with respect to any Patent Challenge where the Patent Challenge is made in defense of an assertion of the relevant Patent that is first brought by CRISPR against Vertex. For the avoidance of doubt, any participation by Vertex or its employees in any claim, challenge or proceeding in response to a subpoena or as required under a pre-existing agreement between Vertex's employee(s) or consultant(s) and their prior employer(s) shall not constitute active and voluntary participation or assistance and shall not give rise to CRISPR's right to terminate any license hereunder.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

11.2.5 Disputes Regarding Material Breach. Notwithstanding the foregoing, if the Breaching Party in Section 11.2.3 disputes in good faith the existence, materiality, or failure to cure of any such breach that is not a payment breach, and provides notice to the Non-Breaching Party of such dispute within the relevant cure period, the Non-Breaching Party will not have the right to terminate this Agreement in accordance with Section 11.2.3, or the right to exercise the alternative remedy provisions of 11.3, as applicable, unless and until the relevant dispute has been resolved. It is understood and acknowledged that during the pendency of such dispute, all the terms and conditions of this Agreement will remain in effect and the Parties will continue to perform all of their respective obligations hereunder.

11.2.6 Termination for Insolvency. If CRISPR (or any CRISPR Entity(ies)) makes an assignment for the benefit of creditors, appoints or suffers appointment of a receiver or trustee over all or substantially all of its property, files a petition under any bankruptcy or insolvency act or has any such petition filed against it that is not discharged within [***] of the filing thereof (each, an "**Insolvency Event**"), then Vertex may terminate this Agreement in its entirety effective immediately upon written notice to CRISPR. If Vertex terminates this Agreement pursuant to this Section 11.2.5:

(a) All rights and licenses now or hereafter granted by CRISPR to Vertex under or pursuant to this Agreement, including, for the avoidance of doubt, any Exclusive Licenses are, for all purposes of Section 365(n) of the U.S. Bankruptcy Code, licenses of rights to "intellectual property" as defined in the U.S. Bankruptcy Code. Upon the occurrence of any Insolvency Event with respect to CRISPR (or any CRISPR Entity(ies)), CRISPR agrees that Vertex, as licensee of such rights under this Agreement, will retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code. CRISPR will, during the term of this Agreement, create and maintain current copies or, if not amenable to copying, detailed descriptions or other appropriate embodiments, to the extent feasible, of all intellectual property licensed under this Agreement. Each Party acknowledges and agrees that "embodiments" of intellectual property within the meaning of Section 365(n) include laboratory notebooks, cell lines, product samples and inventory, research studies and data, all Regulatory Approvals (and all applications for Regulatory Approval) and rights of reference therein, the Licensed Technology and all information related to the Licensed Technology. If (x) a case under the U.S. Bankruptcy Code is commenced by or against CRISPR (or any CRISPR Entity(ies)), (y) this Agreement is rejected as provided in the U.S. Bankruptcy Code, and (z) Vertex elects to retain its rights hereunder as provided in Section 365(n) of the U.S. Bankruptcy Code, CRISPR (in any capacity, including debtor-in-possession) and its successors and assigns (including a trustee) will:

(i) provide to Vertex all such intellectual property (including all embodiments thereof) held by CRISPR and such successors and assigns, or otherwise available to them, immediately upon Vertex's written request. Whenever CRISPR or any of its successors or assigns provides to Vertex any of the intellectual property licensed hereunder (or any embodiment thereof) pursuant to this Section 11.2.5(a)(i), Vertex will

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

have the right to perform CRISPR's obligations hereunder with respect to such intellectual property, but neither such provision nor such performance by Vertex will release CRISPR from liability resulting from rejection of the license or the failure to perform such obligations; and

(ii) not interfere with Vertex's rights under this Agreement, or any agreement supplemental hereto, to such intellectual property (including such embodiments), including any right to obtain such intellectual property (or such embodiments) from another entity, to the extent provided in Section 365(n) of the U.S. Bankruptcy Code.

(b) All rights, powers and remedies of Vertex provided herein are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at law or in equity (including the U.S. Bankruptcy Code) in the event of the commencement of a case under the U.S. Bankruptcy Code with respect to CRISPR. The Parties agree that they intend the following rights to extend to the maximum extent permitted by Applicable Law, and to be enforceable under U.S. Bankruptcy Code Section 365(n):

(i) the right of access to any intellectual property rights (including all embodiments thereof) of CRISPR, or any Third Party with whom CRISPR contracts to perform an obligation of CRISPR under this Agreement, and, in the case of any such Third Party, which is necessary for the Manufacture, use, sale, import or export of Licensed Agents; and

(ii) the right to contract directly with any Third Party to complete the contracted work.

11.3 Alternative Remedies to Termination.

11.3.1 Prior to Option Exercise. If a CRISPR Breach Event occurs prior to Vertex exercising its Option with respect to a particular Collaboration Target, Vertex may elect the alternative remedy provisions of this Section 11.3.1 with respect to each Collaboration Target for which it has not yet exercised the Option and that is subject to such CRISPR Breach Event (in the case of a CRISPR Program Breach), or all such Collaboration Targets (in the case of a CRISPR Agreement Breach), by providing written notice of such election to CRISPR, in which case, this Agreement will continue in full force and effect with the following modifications with respect to each Collaboration Target for which Vertex elects to exercise its rights under this Section 11.3.1. If Vertex exercises its rights under this Section 11.3.1, such exercise shall be Vertex's sole remedy in connection with such CRISPR Breach Event; Vertex shall have no other rights hereunder or at law or in equity with respect to the relevant CRISPR Breach Event; and CRISPR shall have no obligation to cure such CRISPR Breach Event.

(a) if CRISPR has not completed the activities for which it is responsible under the applicable Research Plan, [***], in which case, [***], If [***] for such activities, CRISPR will [***] and Vertex will [***] as provided herein;

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(b) Vertex's obligations under [***] will not apply with respect to the applicable Collaboration Target;

(c) CRISPR will provide to Vertex [***] and [***] in [***] under the relevant [***] in an efficient and orderly manner;

(d) in the event that Vertex subsequently elects to obtain the Exclusive License with respect to any such Collaboration Target, such election shall be regarded as an Option pursuant to Section 4.1.1 (subject to the Option Cap), *provided* that [***].

11.3.2 After Option Exercise. If a CRISPR Breach Event occurs after Vertex exercises its Option with respect to a particular Collaboration Target, Vertex may elect the alternative remedy provisions of this Section 11.3.2 with respect to any Collaboration Target for which it has exercised the Option and that is subject to such CRISPR Breach Event (in the case of a CRISPR Program Breach), or all such Collaboration Targets (in the case of a CRISPR Agreement Breach), by providing written notice of such election to CRISPR, in which case, this Agreement will continue in full force and effect with the following modifications with respect to each Collaboration Target for which Vertex elects to exercise its rights under this Section 11.3.2, each at Vertex's election. If Vertex exercises its rights under this Section 11.3.2, such exercise shall be Vertex's sole remedy in connection with such CRISPR Breach Event; Vertex shall have no other rights hereunder or at law or in equity with respect to the relevant CRISPR Breach Event; and CRISPR shall have no obligation to cure such CRISPR Breach Event.

(a) CRISPR's right to [***];

(b) Vertex may [***] required or permitted [***] established pursuant to this Agreement in connection with the [***]; *provided*, *however*, Vertex will not have the right to: (i) [***] of this Agreement; (ii) [***] of the Parties, (iii) [***] under this Agreement; (iv) exercise its [***] would constitute a violation of an Applicable Law; (v) make a determination [***] under this Agreement or (vi) require [***], whether internal or external, including capital expenditures for which [***] as provided herein; and

(c) to the extent CRISPR is then conducting Additional Research, Vertex may, but will not be obligated to, assume responsibility for such Additional Research, in which case, Vertex's obligation to fund such activities as provided in Section 7.4 will terminate. If Vertex does not elect to assume responsibility for such activities, CRISPR will continue to perform such activities and Vertex will continue to reimburse CRISPR for Research Costs arising out of such activities as provided herein.

11.3.3 [***]. If (a) CRISPR (or any CRISPR Entity(ies)) commits a breach or series of breaches of this Agreement, (b) Vertex incurs at least [***] in aggregate losses, damages and expenses as a result of such breach or breaches, (c) Vertex does not terminate this Agreement in its entirety or with respect to a Collaboration Target or Product due to such breach or breaches, and (d) Vertex has not exercised its rights under Section 11.3.1 or 11.3.2, as applicable, with respect to such breach or breaches, then, in addition to any other remedies Vertex may have under this Agreement, at law or in equity or otherwise, [***]. [***] Vertex

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

will provide CRISPR with a written certificate, signed by Vertex's Chief Financial Officer, certifying [***]. Notwithstanding the foregoing, if CRISPR notifies Vertex in writing that it disputes Vertex's assertion that CRISPR (or any CRISPR Entity (ies)) is in breach of this Agreement [***], then (a) Vertex will initiate the dispute resolution process set forth in Section 11.3.4, and (b) pending the Parties' agreement regarding the appropriate [***] or a determination by the mediator [***] in accordance with Section 11.3.4(b), Vertex will [***]. If the Parties cannot settle their dispute by mutual agreement, then, in accordance with Section 11.3.4 (b), the mediator will determine (1) [***], (2) [***] and (3) if [***], in which case Vertex [***].

11.3.4 [***] Dispute Resolution.

(a) Escalation. If Vertex has exercised its [***] rights under Section 11.3.3, and there is a dispute regarding whether CRISPR is in breach of this Agreement [***], either Party may make a written request that [***] be referred for resolution to Executive Officers of each Party (or their designees). Within [***] after such request, the Executive Officers of each Party (or their designees) will meet in person at a mutually acceptable time and location or by means of telephone or video conference to negotiate a settlement of a [***]. Each Party may elect to have such Party's JRC representatives participate in such meeting, if desired, *provided* that it provides the other Party with reasonable advance notice of such intent so as to enable the other Party to have its JRC representatives also participate in such meeting, if desired. In the event that the Executive Officers of each Party (or their designees) fail to resolve the [***] within such [***] the [***] will be referred to mediation under Section 11.3.4(b).

(b) Mediation. If a [***] cannot be resolved pursuant to Section 11.3.4(a), the Parties agree to try in good faith to resolve any such [***] by non-binding mediation administered by JAMS End Dispute in accordance with its commercial mediation rules. The mediation will be conducted by a single mediator appointed by agreement of the Parties who will have previous financial experience in the pharmaceutical industry, or failing such agreement by JAMS End Dispute in accordance with its commercial mediation rules. Unless otherwise mutually agreed upon by the Parties, the mediation proceedings will be conducted in Boston, Massachusetts. The Parties agree that [***] the cost of the mediation, including filing and hearing fees, and the cost of the mediator(s). Each Party will bear its own attorneys' fees and associated costs and expenses. If the Parties are unable to resolve a [***] pursuant to such mediation, then at the completion of such mediation the mediator will decide the following issues, which decision will be binding on the Parties pending final resolution of the [***] by a court of competent jurisdiction:

(i) Whether the [***] by Vertex pursuant to Section 11.3.3 exceeds the mediator's objective good faith estimate of [***]; and

(ii) What amount (if any) may Vertex [***] under Section 11.3.3, which [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(c) Mediator Resolution.

(i) If the mediator determines that [***] by Vertex pursuant to Section 11.3.3 [***], the Parties will promptly cause [***] as provided for in Section 7.10. The Parties will promptly cause [***].

(ii) If the mediator determines that Vertex may [***] under Section 11.3.3, Vertex may [***].

(iii) The decisions rendered by mediator with respect to [***] will be binding on the Parties pending resolution of the [***] by the agreement of the Parties or by a court of competent jurisdiction in accordance with this Agreement.

11.4 Consequences of Expiration or Termination of the Agreement.

11.4.1 In General. If this Agreement expires or is terminated by a Party in accordance with this ARTICLE 11 at any time and for any reason, the following terms will apply to any Product in any country that is the subject of such expiration or termination:

(a) The Parties will return (or destroy, as directed by the other Party) all data, files, records and other materials containing or comprising the other Party's Confidential Information, except to the extent such Confidential Information is subject to a license or similar grant of rights that survives such termination or is necessary or useful to conduct activities for a surviving Collaboration Program or Product or country. Notwithstanding the foregoing, the Parties will be permitted to retain one copy of such data, files, records, and other materials for archival and legal compliance purposes.

(b) Termination or expiration of this Agreement for any reason will be without prejudice to any rights or financial compensation that will have accrued to the benefit of a Party prior to such termination or expiration. Such termination or expiration will not relieve a Party from obligations that are expressly indicated to survive the termination or expiration of this Agreement.

(c) The following provisions of this Agreement will survive any expiration or termination of this Agreement: Article 1 (Definitions), Section 5.3 (License Grants to Vertex) (solely in the event of expiration, not termination) Section 5.4 (Licenses to Improvements), Section 5.6 (No Implied Licenses), Article 7 (Financial Provisions), solely to the extent of accrued obligation as contemplated by Section 11.4.1(b), Section 8.1.1 (Ownership; Assignment - CRISPR Technology and Vertex Technology), 8.1.2 (Ownership; Assignment - Agreement Technology), Sections 8.5-8.6 (with respect to proceedings to the extent relating to events occurring prior to the effective date of termination) 8.6.4 (Joinder), Article 10 (Indemnification; Insurance), Section 11.2.5 (Public Announcements; Publications), Section 11.4 (Consequences of Expiration or Termination of the Agreement), Sections 12.1, 12.2, 12.3, 12.4 and 12.6 (Confidentiality) and Article 13 (Miscellaneous)."

11.4.2 Termination Before License Grant. If this Agreement expires or is terminated, in whole or in part with respect to a Collaboration Target, by a Party in accordance with this ARTICLE 11 before Vertex has been granted an Exclusive License for a particular Collaboration Target, then, in addition to the terms set forth in Section 11.4.1, the following terms will apply to each Collaboration Target that is the subject of such expiration or termination:

(a) Vertex's Option under Section 4.1 will expire and CRISPR will be free to Research, Develop, Manufacture and Commercialize the applicable Licensed Agents or Products in the applicable counties on its own or with a Third Party;

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(b) except with respect to (i) any termination by Vertex under Section 11.2.3(a) or (ii) any expiration or termination with respect to a Collaboration Target that is associated with [***], effective upon such termination, Vertex hereby grants to CRISPR a non-exclusive, royalty-free, irrevocable, perpetual, worldwide license, which CRISPR may sublicense through multiple tiers, under all Vertex Program Technology Controlled by Vertex or its Affiliates (A) generated under the applicable Collaboration Program or (B) used in such terminated Collaboration Program to Develop, Manufacture and Commercialize Licensed Agents and Products directed to the relevant Collaboration Target; *provided*, that if the grant of such license to CRISPR with respect to any Know-How or Patent included in the Vertex Program Technology or CRISPR's exercise of such license would [***] or would require compliance with any provision of any license between Vertex and a Third Party, Vertex will so notify CRISPR and such Know-How or Patent will only be included in the foregoing license if, following receipt of such notice, [***] and comply with any such provision; and

(c) except as explicitly set forth in Section 11.4.1, Vertex will have no further rights and CRISPR will have no further obligations with respect to each terminated Collaboration Target.

11.4.3 Termination After License Grant. If this Agreement is terminated, in whole or in part with respect to a Product or Collaboration Target, by a Party in accordance with this ARTICLE 11 (but not if this Agreement expires in accordance with its terms) after Vertex has been granted an Exclusive License for a particular Collaboration Target, then, in addition to the terms set forth in Section 11.4.1, the following terms will apply to any Product or Collaboration Target that is the subject of such termination:

(a) except as set forth in Section 11.4.3(f), the applicable licenses granted by CRISPR to Vertex under this Agreement will terminate and Vertex and its Affiliates will cease all Research, Development, Manufacture and Commercialization activities with respect to the applicable Products;

(b) Vertex will assign back to the CRISPR Entity designated by CRISPR AG any Patents assigned to Vertex under Section 8.1.3 that relate to the applicable Collaboration Target to the extent that such Patents do not also relate to a Collaboration Target for which Vertex is maintaining the Exclusive License;

(c) except with respect to (i) any termination by Vertex under Section 11.2.3(a) or (ii) any expiration or termination with respect to a Collaboration Target that is associated with [***], Vertex shall, as promptly as practicable, transfer to the CRISPR Entity designated by CRISPR AG or such CRISPR Entity's designee

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

possession and ownership of all Regulatory Approvals solely relating to the Development, Manufacture or Commercialization of any terminated Product or Collaboration Target within such terminated Collaboration Program;

(d) except as explicitly set forth in Section 11.4.1, Vertex will have no further rights and CRISPR will have no further obligations with respect to the terminated Products and Collaboration Target(s);

(e) except with respect to (i) any termination by Vertex under Section 11.2.3(a) or (ii) any termination with respect to a Collaboration Target that is associated with [***], and subject to Section 11.4.3(f), effective upon such termination, Vertex hereby grants to CRISPR a non-exclusive, royalty-free, irrevocable, perpetual, worldwide license, which CRISPR may sublicense through multiple tiers, under all Vertex Program Technology Controlled by Vertex or its Affiliates and (A) generated under the applicable Collaboration Program or (B) used in such terminated Collaboration Program to Develop, Manufacture and Commercialize Licensed Agents and Products directed to the relevant Collaboration Target; *provided*, that if the grant of such license to CRISPR with respect to any Know-How or Patent included in the Vertex Program Technology or CRISPR's exercise of such license would [***] or would require compliance with any provision of any license between Vertex and a Third Party, Vertex will so notify CRISPR and such Know-How or Patent will only be included in the foregoing license if, following receipt of such notice, [***] and comply with any such provision; and

(f) any permitted Sublicense of Vertex will, at the Sublicensee's option, survive such termination; *provided* that the Sublicensee is not in material breach of any of its obligations under such Sublicense. In order to effect this provision, at the request of the Sublicensee, CRISPR will enter into a direct license with the Sublicensee on substantially the same terms as this Agreement (taking into account the scope of the licensee granted under such Sublicense); *provided* that CRISPR will not be required to undertake obligations in addition to those required by this Agreement, and that CRISPR's rights under such direct license will be consistent with its rights under this Agreement, taking into account the scope of the license granted under such direct license. Any such Sublicense would continue to include rights to any Patent assigned to CRISPR pursuant to Section 11.4.3(b) to the extent such rights were included in such Sublicense prior to termination and the license to CRISPR set forth in Section 11.4.3(e), if applicable, would not include rights to any Patent Controlled by Vertex to the extent such license would conflict with any rights granted to the relevant Sublicensee under such Patent.

ARTICLE 12
CONFIDENTIALITY

12.1 Confidentiality. Except to the extent expressly authorized by this Agreement or otherwise agreed in writing, the Parties agree that, during the Agreement Term and for [***] thereafter, each Party (the "**Receiving Party**") receiving any Confidential Information of the other Party (the "**Disclosing Party**") hereunder will: (a) keep the Disclosing Party's Confidential Information confidential; (b) not publish, or allow to be published, and will not

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

otherwise disclose, or permit the disclosure of, the Disclosing Party's Confidential Information in any manner not expressly authorized pursuant to the terms of this Agreement; and (c) not use, or permit to be used, the Disclosing Party's Confidential Information for any purpose other than as expressly authorized pursuant to the terms of this Agreement. Without limiting the generality of the foregoing, to the extent that Vertex provides to CRISPR (or any CRISPR Entity(ies)) any Confidential Information owned by any Third Party, CRISPR will handle such Confidential Information in accordance with the terms and conditions of this ARTICLE 12 applicable to a Receiving Party.

12.2 Authorized Disclosure. Notwithstanding the foregoing provisions of Section 12.1, each Party may disclose Confidential Information belonging to the other Party to the extent such disclosure is reasonably necessary to:

12.2.1 file or prosecute patent applications as contemplated by this Agreement;

12.2.2 prosecute or defend litigation;

12.2.3 exercise its rights and perform its obligations hereunder; or

12.2.4 comply with Applicable Law.

If a Party deems it reasonably necessary to disclose Confidential Information belonging to the other Party pursuant to this Section 12.2, the Disclosing Party will to the extent possible give reasonable advance written notice of such disclosure to the other Party and take reasonable measures to ensure confidential treatment of such information. In addition to the foregoing, [***] may disclose [***] Confidential Information to Third Parties as reasonably required to facilitate the actual or potential Research, Development, Manufacture or Commercialization of [***] or Products; *provided* that such disclosure is covered by terms of confidentiality and non-use similar to those set forth herein.

Notwithstanding anything to the contrary contained herein, in no event may [***] disclose [***] Confidential Information to any Third Party (including any of CRISPR's investors, collaborators or licensees) engaged in the research, development, manufacture or commercialization of pharmaceutical products.

12.3 SEC Filings and Other Disclosures. Either Party may disclose the terms of this Agreement (i) to the extent required to comply with Applicable Law, including the rules and regulations promulgated by the United States Securities and Exchange Commission or any equivalent governmental agency in any country in the Territory; *provided*, that such Party will reasonably consider the comments of the other Party regarding confidential treatment sought for such disclosure and (ii) to its advisors (including financial advisors, attorneys and accountants), actual or potential acquisition partners, financing sources or investors and underwriters on a need to know basis; *provided* that such disclosure is covered by terms of confidentiality similar to those set forth herein (which may include professional ethical obligations).

12.4 Residual Knowledge Exception. Notwithstanding any provision of this Agreement to the contrary, Confidential Information will not include Residual Knowledge. Any use made by the Receiving Party of Residual Knowledge is on an "as is, where is" basis, with all faults and all representations and warranties disclaimed and at its sole risk.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

12.5 Public Announcements; Publications.

12.5.1 Coordination. CRISPR and Vertex will, from time to time and at the request of the other Party, discuss the general information content relating to this Agreement that may be publicly disclosed; *provided*, *however*, that [***] will have no obligation to consult with [***] with respect to any scientific publication or public announcement concerning [***] Research, Development, Manufacture, Commercialization or use of any [***] or Product (except as otherwise expressly set forth in Section 12.5.3).

12.5.2 Announcements. The Parties will jointly issue a press release, in the form attached hereto as Schedule M, regarding the signing of this Agreement on a date to be determined by Vertex within [***] following the Effective Date. Except as set forth in the preceding sentence and as may be expressly permitted under Section 12.3, or as required to comply with Applicable Law (including the rules and regulations promulgated by the United States Securities and Exchange Commission or any equivalent governmental agency in any country in the Territory), neither Party will make any public announcement regarding this Agreement without the prior written approval of the other Party. For the sake of clarity, nothing in this Agreement will prevent [***] from making any scientific publication or public announcement concerning [***] Research, Development, Manufacture or Commercialization activities with respect to any [***] or Product under this Agreement; *provided*, *however*, that, except as permitted under Section 12.2, [***] will not disclose any of [***] Confidential Information in any such publication or announcement without obtaining CRISPR's prior written consent to do so.

12.5.3 Publications. During the Agreement Term, each Party will submit to the other Party (the "**Non-Disclosing Party**") for review and approval any proposed academic, scientific and medical publication or public presentation related to any Licensed Agent or Product or any activities conducted pursuant to any Research Plan. In each such instance, such review and approval will be conducted for the purposes of preserving the value of the Licensed Technology and the Vertex Technology, the rights granted to Vertex hereunder and determining whether any portion of the proposed publication or presentation containing the Non-Disclosing Party's Confidential Information should be modified or deleted. Written copies of such proposed publication or presentation required to be submitted hereunder will be submitted to the Non-Disclosing Party no later than [***] before submission for publication or presentation (or five Business Days in advance in the case of an abstract). The Non-Disclosing Party will provide its comments with respect to such publications and presentations within [***] of its receipt of such written copy (or [***] in the case of an abstract). The review period may be extended for an additional [***] if the Non-Disclosing Party reasonably requests such extension including for the preparation and filing of patent applications. Notwithstanding anything to the contrary, the Non-Disclosing Party may require that the other Party redact the Non-Disclosing Party's Confidential Information from any such proposed publication or presentation. CRISPR and Vertex will each comply with standard academic practice regarding authorship of scientific publications and recognition of contribution of other parties in any publication. Notwithstanding the foregoing, Vertex's obligation to submit any publication to CRISPR for review and approval under this

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Section 12.5.3 will not apply to any publication made with respect to a Collaboration Program following Vertex's exercise of the applicable Option that does not contain CRISPR's Confidential Information or disclose any non-public information included in the Licensed Technology; *provided*, that where reasonably possible, Vertex will provide CRISPR with an advance copy of such publication if such publication is [***].

12.6 Vertex Information Rights.

12.6.1 If Vertex determines in good faith that CRISPR (or any CRISPR Entity(ies)) is an entity that is subject to financial consolidation with Vertex for the purposes of its quarterly and annual financial statements (or otherwise requires such information in order to comply with GAAP), CRISPR will make available to Vertex:

(a) as soon as practicable, but in any event within [***] after the end of each Calendar Quarter (i) an unaudited balance sheet as of the end of such Calendar Quarter, (ii) unaudited statements of income and cash flows for such Calendar Quarter, (iii) an unaudited statement of stockholders' equity for such period, and (iv) a detailed trial balance as of the end of such Calendar Quarter, all prepared in accordance with GAAP (except that such financial statements may (x) be subject to year-end audit adjustments and (y) not contain all notes thereto that may be required in accordance with GAAP) and thereafter will promptly provide such other information as Vertex may reasonably request;

(b) as soon as practicable, but in any event within [***] after the end of each Calendar Year (i) an audited balance sheet as of the end of such Calendar Year, (ii) audited statements of income and cash flows for such Calendar Year, (iii) an audited statement of stockholders' equity for such Calendar Year and (iv) a detailed trial balance as of the end of such Calendar Year, together with related footnotes all prepared in accordance with GAAP and audited and certified by a nationally recognized independent public accounting firm; and

(c) on or prior to December 31 of each Calendar Year (other than the Calendar Year ending December 31, 2015), such [***] as of [***] of such year as prepared by [***]

ARTICLE 13
MISCELLANEOUS

13.1 Assignment. Neither this Agreement nor any interest hereunder will be assignable by either Party without the prior written consent of the other Party, except as follows: (a) Vertex, and subject to Section 13.2, CRISPR, may, subject to the terms of this Agreement, assign its rights and obligations under this Agreement by way of sale of itself or the sale of the portion of such Party's business to which this Agreement relates, through merger, sale of assets or sale of stock or ownership interest; *provided* that such sale is not primarily for the benefit of its creditors; and *provided further* that no CRISPR Entity may assign its rights and obligations hereunder unless all CRISPR Entities are assigning their rights and obligations hereunder to the same Third Party; and (b) either Party may assign its rights and obligations under this Agreement

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

to any of its Affiliates; *provided* that such Party will remain liable for all of its rights and obligations under this Agreement. An assigning Party will promptly notify the other Party of any assignment or transfer under the provisions of this Section 13.1. This Agreement will be binding upon the successors and permitted assigns of the Parties and the name of a Party appearing herein will be deemed to include the names of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this Agreement. Any assignment not in accordance with this Section 13.1 will be void.

13.2 Change of Control of CRISPR.

13.2.1 Notification. CRISPR will notify Vertex in writing promptly (and in any event within [***] Business Days) following the execution of a definitive agreement by any CRISPR Entity, its Affiliates or its equity holders that could reasonably be expected to result in a Change of Control of any CRISPR Entity.

13.2.2 Effects of Change of Control of CRISPR. If during the Agreement Term any CRISPR Entity undergoes a Change of Control to a Competitor, then upon the effective date of such Change of Control (a) Vertex's obligation to provide CRISPR [***] will terminate and (b) Vertex will [***] with respect to the [***].

13.3 Force Majeure. Each Party will be excused from the performance of its obligations under this Agreement to the extent that such performance is prevented by Force Majeure and the nonperforming Party promptly provides notice of the prevention to the other Party. Such excuse will be continued so long as the condition constituting force majeure continues and the nonperforming Party uses Commercially Reasonable Efforts to remove the condition.

13.4 Representation by Legal Counsel. Each Party hereto represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption will exist or be implied against the Party that drafted such terms and provisions.

13.5 Notices. All notices which are required or permitted hereunder will be in writing and sufficient if delivered personally or sent by nationally-recognized overnight courier, addressed as follows:

If to Vertex:

Vertex Pharmaceuticals Incorporated
Attn: Business Development
50 Northern Avenue
Boston, Massachusetts 02110

with a copy to:

Vertex Pharmaceuticals Incorporated
Attn: Corporate Legal
50 Northern Avenue
Boston, Massachusetts 02110

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

and:

Ropes & Gray LLP
Attn: Marc A. Rubenstein
Prudential Tower
800 Boylston Street
Boston, Massachusetts 02199-3600

If to CRISPR:

CRISPR Therapeutics Ltd.
Attn: Chief Legal Officer
85 Tottenham Court Road
London W1T 4TQ
United Kingdom

with a copy to:

Goodwin Procter LLP
Attn: Christopher Denn
53 State Street
Boston, Massachusetts 02109

or to such other address as the Party to whom notice is to be given may have furnished to the other Party in writing in accordance herewith. In addition, each Party will deliver a courtesy copy to the other Party's Alliance Manager concurrently with such notice. Any such notice will be deemed to have been given: (a) when delivered if personally delivered on a Business Day (or if delivered or sent on a non-business day, then on the next Business Day); or (b) on receipt if sent by overnight courier. Any notices required or permitted under this Agreement that are delivered by Vertex to CRISPR AG pursuant to this Section 13.5 shall be deemed properly delivered hereunder to each of CRISPR UK, CRISPR AG, CRISPR Inc. and Tracr.

13.6 Amendment. No amendment, modification or supplement of any provision of this Agreement will be valid or effective unless made in writing and signed by a duly authorized officer of each of Vertex Parent, Vertex UK and CRISPR AG, CRISPR Inc., CRISPR UK and Tracr.

13.7 Waiver. No provision of this Agreement will be waived by any act, omission or knowledge of a Party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving Party. The waiver by either of Vertex or CRISPR of any breach of any provision hereof by the other Party will not be construed to be a waiver of any succeeding breach of such provision or a waiver of the provision itself. Written waiver of any provision of this Agreement by of any one of the CRISPR Entities in accordance with this Section 13.7 shall be binding upon each of CRISPR UK, CRISPR AG, CRISPR Inc. and Tracr.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

13.8 Severability. If any clause or portion thereof in this Agreement is for any reason held to be invalid, illegal or unenforceable, the same will not affect any other portion of this Agreement, as it is the intent of the Parties that this Agreement will be construed in such fashion as to maintain its existence, validity and enforceability to the greatest extent possible. In any such event, this Agreement will be construed as if such clause of portion thereof had never been contained in this Agreement, and there will be deemed substituted therefor such provision as will most nearly carry out the intent of the Parties as expressed in this Agreement to the fullest extent permitted by Applicable Law.

13.9 Descriptive Headings. The descriptive headings of this Agreement are for convenience only and will be of no force or effect in construing or interpreting any of the provisions of this Agreement.

13.10 Export Control. This Agreement is made subject to any restrictions concerning the export of products or technical information from the United States of America or other countries that may be imposed upon or related to CRISPR or Vertex from time to time. Each Party agrees that it will not export, directly or indirectly, any technical information acquired from the other Party under this Agreement or any products using such technical information to a location or in a manner that at the time of export requires an export license or other governmental approval, without first obtaining the written consent to do so from the appropriate Governmental Authority.

13.11 Governing Law. This Agreement, and all claims arising under or in connection therewith, will be governed by and interpreted in accordance with the substantive laws of The Commonwealth of Massachusetts, without regard to conflict of law principles thereof.

13.12 Entire Agreement. This Agreement constitutes and contains the complete, final and exclusive understanding and agreement of the Parties and cancels and supersedes any and all prior negotiations, correspondence, understandings and agreements, whether oral or written, between the Parties respecting the subject matter hereof and thereof, including that certain Confidentiality Agreement between Vertex Parent and CRISPR dated May 6, 2015, which is hereby superseded and replaced in its entirety as of the Effective Date, and any Confidential Information disclosed by the Parties under such agreement will be treated in accordance with the provisions of ARTICLE 12.

13.13 Independent Contractors. Both Parties are independent contractors under this Agreement. Nothing herein contained will be deemed to create an employment, agency, joint venture or partnership relationship between the Parties hereto or any of their agents or employees, or any other legal arrangement that would impose liability upon one Party for the act or failure to act of the other Party. Neither Party will have any express or implied power to enter into any contracts or commitments or to incur any liabilities in the name of, or on behalf of, the other Party, or to bind the other Party in any respect whatsoever.

13.14 Interpretation. Except where the context expressly requires otherwise, (a) the use of any gender herein will be deemed to encompass references to either or both genders, and the use of the singular will be deemed to include the plural (and vice versa), (b) the words “include,” “includes” and “including” will be deemed to be followed by the phrase “without limitation,”

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(c) the word "will" will be construed to have the same meaning and effect as the word "shall," (d) any definition of or reference to any agreement, instrument or other document herein will be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (e) any reference herein to any Person will be construed to include the Person's successors and assigns, (f) the words "herein," "hereof" and "hereunder," and words of similar import, will be construed to refer to this Agreement in its entirety and not to any particular provision hereof, (g) all references herein to Sections, Schedules or Exhibits will be construed to refer to Sections, Schedules or Exhibits of this Agreement, and references to this Agreement include all Schedules and Exhibits hereto, (h) the word "notice" will mean notice in writing (whether or not specifically stated) and will include notices, consents, approvals and other written communications contemplated under this Agreement, (i) provisions that require that a Party, the Parties or any committee hereunder "agree," "consent" or "approve" or the like will require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise (but excluding e-mail and instant messaging), (j) references to any specific law, rule or regulation, or article, section or other division thereof, will be deemed to include the then-current amendments thereto or any replacement or successor law, rule or regulation thereof, (k) any definition of or reference to any agreement, instrument or other document herein will be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), and (l) the term "or" will be interpreted in the inclusive sense commonly associated with the term "and/or."

13.15 No Third Party Rights or Obligations. No provision of this Agreement will be deemed or construed in any way to result in the creation of any rights or obligations in any Person not a Party to this Agreement.

13.16 Further Actions. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

13.17 Counterparts. This Agreement may be executed in two counterparts, each of which will be an original and both of which will constitute together the same document. Counterparts may be signed and delivered by facsimile or digital transmission (.pdf), each of which will be binding when received by the applicable Party.

13.18 CRISPR Entities. Notwithstanding anything to the contrary in this Agreement:

13.18.1 CRISPR UK, CRISPR AG, CRISPR Inc. and Tracr shall be jointly and severally liable to Vertex for all obligations of CRISPR under this Agreement;

13.18.2 Breach or violation of any representation, warranty covenant or other obligation of CRISPR under this Agreement may result from, be caused by or arise from the act or omission of any one or more of the CRISPR Entities;

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

13.18.3 Any particular right or interest of CRISPR under this Agreement shall only be exercisable once by the first CRISPR Entity to exercise such right or interest hereunder on behalf of CRISPR (*i.e.*, Vertex shall not be liable to more than one CRISPR Entity with respect to any particular right or interest of CRISPR hereunder, including, without limitation, any payment obligations of Vertex hereunder); and

13.18.4 Any consent or approval of CRISPR permitted or required under this Agreement by any one of CRISPR UK, CRISPR AG, CRISPR Inc. or Tracr shall be binding upon all of the CRISPR Entities.

[*SIGNATURE PAGE FOLLOWS*]

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their representatives thereunto duly authorized as of the Effective Date.

VERTEX PHARMACEUTICALS INCORPORATED

By: /s/ Ian Smith

Name: Ian Smith

Title: Chief Financial Officer

CRISPR THERAPEUTICS AG

By: /s/ Rodger Novak

Name: Rodger Novak

Title: CEO

VERTEX PHARMACEUTICALS LIMITED

By: /s/ Ian Smith

Name: Ian Smith

Title: Director

CRISPR THERAPEUTICS LIMITED

By: /s/ Rodger Novak

Name: Rodger Novak

Title: CEO

Signature Page to Strategic Collaboration, Option and License Agreement

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Schedule A

CRISPR Reserved Targets

Following are the CRISPR Reserved Targets:

1. The following Targets:

a. [***]

b. [***]

c. [***]

d. [***]

e. [***]

f. [***]

h. [***]

i. [***]

j. [***]

2. All Targets that are, [***] (a) [***] or (b) [***] or (c) [***].

3. All Targets that are, at the time Vertex has proposed to add such a Target to the Vertex Target List, [***].

4. All Targets that are, at the time Vertex has proposed to add such a Target to the Vertex Target List, Targets that are [***].

All Targets that are, at the time Vertex has proposed to add such a Target to the Vertex Target List, Targets that are [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE A

Schedule B

Initial Vertex Targets

1) CFTR (cystic fibrosis transmembrane conductance regulator)

2) [***]

3) [***]

4) [***]

5) [***]

6) [***]

7) [***]

8) [***]

9) [***]

10) [***]

11) [***]

12) [***]

13) [***]

Initial Collaboration Targets

1) CFTR (cystic fibrosis transmembrane conductance regulator)

2) [***]
[***]

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE B

Schedule C

Option Exercise Data Package

- Option Exercise Data Package. All data for the Option Exercise Data Package is pre-specified by the Collaboration Program Working Group and is reviewed and endorsed by the JRC.
- The responsibilities below would be specified on a program by program basis and endorsed by the JRC ahead of beginning any Research Plan.
- Upon completion of the work, the data for each item is presented to the JRC and compared to the pre-specification. The JRC endorses the interpretation that the data are or are not consistent with the pre-specification.

Item	Party Responsible for Generating Item/Data
[***]	CRISPR & Vertex
[***]	CRISPR
[***]	CRISPR
[***]	CRISPR and Vertex
[***]	Vertex and CRISPR
[***]	Vertex
[***]	Vertex
[***]	CRISPR

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE C

Schedule D

Initial Research Plan Components

The following are key elements for the Research Plans. A full Research Plan will be created by the Collaboration Program Working Group utilizing these elements in accordance with Section 2.2. The provisions will be approved by the JRC in accordance with ARTICLE 3.

Target Name	Description	
Work Plan Items	Listing of all items required to complete the work plan. This should include all of the items in Schedule C	Listing of responsible parties for each of the work items.
Key milestones	Listing of key waypoints on the way to a transition agreement.	Listing of key dates for each of the milestones.
Budget	Out of Pocket Spend - CRISPR FTE - CRISPR FTE - Vertex	Listing of dollar amounts
Key pieces of data and required values	Listing of key pieces of data expected in the Option Exercise Data Package. This is a critical element and will have to be carefully considered. E.g. for a [***] etc. are other possible values. These will be highly Target specific.	Minimum acceptable values for each of these data. These should be prospective and objective wherever possible.
Key dependencies	List key dependencies on various elements.	
Assumptions	List project assumptions.	
Risks	Listing of key risks, probabilities and impacts	Describe mitigation/ contingency/ avoidance plan

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE D

Schedule E

Subcontractors

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE E

Schedule F

CRISPR Background Know-How
(as of 26 October 2015)

1) Platform related automation and high-throughput: [***]

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE F

Schedule G

Terms of Joint Development & Commercialization Agreement

ARTICLE 1
DEFINITIONS

1.1 "**Audited Party**" has the meaning set forth in Section 7.6.

1.2 "**Auditing Party**" has the meaning set forth in Section 7.6.

1.3 "**Baseball Arbitration**" means "**baseball**" style arbitration in accordance with the arbitration procedure set forth on Schedule I of the Agreement.

1.4 "**Commercialization Budget**" has the meaning set forth in Section 5.1.

1.5 "**Commercialization Costs**" means the sum of the following costs and expenses incurred by the Parties or their respective Affiliates, in Commercializing the Shared Products (and related Manufacturing activities) in the Territory, in each case, to the extent incurred in accordance with the Commercialization Plan and Commercialization Budget:

(a) Expenses incurred in connection with the [***];

(b) Expenses incurred to conduct [***];

(c) [***] representing the [***] as defined in the [***], in each case, to the extent directly attributable to [***];

(d) Expenses identifiable to the [***], in each case, to the extent incurred specifically with respect [***];

(e) Expenses incurred in connection with the [***];

(f) Expenses directly associated with [***], in each case, that are incurred with respect to a [***];

(g) [***];

(h) Expenses reasonably necessary and identifiable to the [***] with respect to: [***];

(i) [***] and

(j) any other Expenses approved by the JCC and included in the Commercialization Budget that are not otherwise included in any other Commercialization Cost category.

Commercialization Costs will exclude [***].

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

1.6 "**Commercialization Plan**" has the meaning set forth in Section 5.1.

1.7 "**Development Budget**" has the meaning set forth in Section 3.1.

1.8 "**Development Costs**" means the sum of the following costs and expenses incurred by the Parties and their respective Affiliates in Developing the Shared Product (and related Manufacturing activities) in the Territory, in each case, to the extent incurred in accordance with the Global Development Plan and the Development Budget, including:

(a) Expenses incurred in [***];

(b) [***];

(c) [***] incurred in connection with [***];

(d) Expenses associated with [***], to the extent incurred with respect to [***];

(e) Expenses incurred in connection with [***], including the Parties' [***];

(f) Expenses associated with [***]; and

(g) any other Expenses incurred for [***] and included in the [***].

Development Costs will exclude [***].

1.9 "**Expenses**" means Out-of-Pocket Costs and FTE Costs.

1.10 "**FTE Costs**" means the product of (a) the number of FTEs (proportionately, on a per-FTE basis) used by a Party or its Affiliates in directly performing activities assigned to such Party under and in accordance with the Global Development Plan, Commercialization Plan or Medical Affairs Plan, as applicable, and (b) the FTE Rate.

1.11 "**FTE**" means one employee full-time for one year or more than one person working the equivalent of a full-time person, working directly on performing activities under the Global Development Plan, Medical Affairs Plan or Commercialization Plan, as applicable, where "**full-time**" is considered [***] hours for one Calendar Year. No additional payment will be made with respect to any individual who works more than [***] hours per Calendar Year and any individual who devotes less than [***] hours per Calendar Year will be treated as an FTE on a pro rata basis based upon the actual number of hours worked divided by [***].

1.12 "**Global Development Plan**" has the meaning set forth in Section 3.1.

1.13 "**Global Branding Strategy**" has the meaning set forth in Section 5.2.2.

1.14 "**JCC**" has the meaning set forth in Section 2.1.

1.15 "**JDC**" has the meaning set forth in Section 2.1.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

1.16 "**JSC**" has the meaning set forth in Section 2.1.

1.17 "**Lead Commercialization Party**" has the meaning set forth in Section 5.1.

1.18 "**Licensed Vertex Know-How**" means (a) [***], that (i) [***] and (ii) [***], (b) [***] and (c) [***].

1.19 "**Licensed Vertex Background Patents**" means (a) [***] that (i) [***] and (ii) [***], (b) [***] and (c) the [***].

1.20 "**Manufacturing Costs**" means the costs of Manufacturing Shared Product, which (a) to the extent such Shared Product is Manufactured by a Party or its Affiliates, [***] and (b) to the extent such Shared Product is Manufactured by a Third Party in an arms-length transaction, [***].

1.21 "**Manufacturing Working Group**" has the meaning set forth in Section 6.1.

1.22 "**Medical Affairs Activities**" means responding to external inquiries or complaints, the planning for and conduct of investigator sponsored Clinical Trials not included in the Global Development Plan, medical education, speaker programs, advisory boards, thought leader activities, educational grants and fellowships, local country government affairs, Phase 3b Clinical Trials, phase IV/post-Regulatory Approval Clinical Trials, generating health economics and outcomes research data from patient reported outcomes, prospective observational studies and retrospective observational studies, and economic models and reimbursement dossiers, deployment of MSLs, medical affairs clinical trial management, doctors in field (other than MSLs), scientific publications and medical communications.

1.23 "**Medical Affairs Budget**" has the meaning set forth in ARTICLE 4.

1.24 "**Medical Affairs Costs**" means all Expenses incurred by the Parties in connection with the conduct of Medical Affairs Activities in accordance with the Medical Affairs Plan and the Medical Affairs Budget;

1.25 "**Medical Affairs Plan**" has the meaning set forth in ARTICLE 4.

1.26 "**MSL**" means medical science liaisons.

1.27 "**Net Loss**" means, for a given period, Net Sales (including deemed Net Sales under Section 8.6.5 of the Agreement) in the Territory less Program Expenses, where the result is a negative number.

1.28 "**Net Profit**" means, for a given period, Net Sales (including deemed Net Sales under Section 8.6.5 of the Agreement) in the Territory less Program Expenses, where the result is a positive number.

1.29 "**Opt-Out Royalty**" has the meaning set forth in Section 11.4.

1.30 "**Other Out-of-Pocket Costs**" means:

(a) Expenses associated with [***] pursuant to the [***];

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

(b) [***];

(c) [***], in each case, that are [***]; and

(d) Expenses incurred in connection with the [***].

1.31 "**Patent Costs**" means all Expenses reasonably allocated to the Shared Products for the prosecution, maintenance and enforcement of Patents that Cover the Shared Products.

1.32 "**Pharmacovigilance Agreement**" has the meaning set forth in Section 8.1.

1.33 "**Program Expenses**" means Development Costs, Commercialization Costs, Medical Affairs Costs, Patent Costs and Other Out-of-Pocket Costs.

1.34 "**Project Leader**" has the meaning set forth in Section 3.1.

1.35 "**Project Team**" has the meaning set forth in Section 3.1.

1.36 "**Reconciliation Report**" has the meaning set forth in Section 7.4.

1.37 "**Subcontract**" has the meaning set forth in ARTICLE 9.

1.38 "**Subcontractor**" has the meaning set forth in ARTICLE 9.

1.39 "**Summary Statement**" has the meaning set forth in Section 7.3.

1.40 "**Trademark**" means all trademarks, service marks, trade names, brand names, sub-brand names, trade dress rights, product configuration rights, certification marks, collective marks, logos, taglines, slogans, designs or business symbols and all words, names, symbols, colors, shapes, designations or any combination thereof that function as an identifier of source or origin or quality, whether or not registered, and all statutory and common law rights therein, and all registrations and applications therefor, together with all goodwill associated with, or symbolized by, any of the foregoing.

ARTICLE 2
GOVERNANCE

2.1 Committees. Within [***] after execution of the Joint Development & Commercialization Agreement, the Parties will establish a joint steering committee (the "**JSC**") to provide high-level oversight and decision-making regarding the activities of the Parties under the Joint Development & Commercialization Agreement. The JSC's responsibilities will include (a) reviewing and overseeing the overall global Development, Manufacture and Commercialization of the Shared Products in the Field, (b) overseeing the JDC, JCC and any other committees and working groups established with respect to the Shared Product and resolving matters on which the JDC, JCC or such committees and working groups are unable to reach consensus and (c) performing such other functions as may be established in the Joint

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

Development & Commercialization Agreement. The JSC will oversee a joint development committee (the "**JDC**") and a joint commercialization committee (the "**JCC**") and such other committees and working groups as the JSC may determine are appropriate from time to time.

2.2 Decision-Making. The JSC, JDC, JCC and all other committees and working groups [***] with the goal being to maximize the chance of successfully developing and commercializing a [***] in a manner consistent with Applicable Laws and the Joint Development & Commercialization Agreement. Disputes arising out of the JDC, JCC or any other committee or working group will be escalated to the JSC for resolution. Disputes arising at the JSC will be referred to senior executives of each Party for resolution. whereupon the Parties' senior executives will meet in person if requested by either such senior executive and attempt in good faith to resolve such dispute by negotiation and consultation for a [***] period following such referral. If the senior executives do not resolve such dispute within such [***] period, such dispute shall be submitted to [***].

ARTICLE 3
DEVELOPMENT

3.1 Global Development Plan. The JDC will oversee the Development of Shared Products by the Parties in the Field in the Territory. Each Shared Product will be Developed in accordance with a global development plan (the "**Global Development Plan**"). The Global Development Plan will include a plan for the Development of the Shared Product in the Territory through Regulatory Approval, including a regulatory strategy, high-level study design criteria, an allocation of responsibilities between the Parties, timelines and a budget for activities conducted under the Global Development Plan (the "**Development Budget**"). The JDC will update the Global Development Plan [***] (or more frequently as needed) and submit it to the JSC for approval. The Parties will establish a project team (the "**Project Team**") to oversee and coordinate activities under the Global Development Plan. The Project Team be formed with an experienced team leader ("**Project Leader**"), and the composition of the Project Team will be determined by the Project Leader based on available personnel from each Party across functions. The Project Team will conduct its responsibilities under the Global Development Plan in good faith and with reasonable care and diligence. The Project Team will provide the JDC with periodic updates regarding the progress of activities pursuant to the Global Development Plan.

3.2 Development Activities.

3.2.1 Regulatory Matters. Regulatory activities will be jointly carried out by the Project Team under the guidance of the JDC. All Regulatory Filings and Regulatory Approvals that relate to Shared Products shall be filed by and held in the name of [***] or its relevant Affiliates. [***] shall use Commercially Reasonable Efforts, in consultation with [***] to seek to obtain and maintain Regulatory Approval for the Shared Product in the Field. [***] will oversee, monitor and manage all regulatory interactions, communications and filings with, and submissions to, Regulatory Authorities with respect to the Shared Products. [***], in consultation with [***], will control all regulatory activities with respect to the Shared Products, including determining the labeling strategy and the content of submissions; *provided* that [***] may review and comment on such strategies and submissions. Vertex will prepare all regulatory submissions and provide [***] with advance drafts of any material documents or other material

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

correspondence pertaining to the Shared Products, including any proposed labeling, that [***] plans to submit to any Regulatory Authority. [***] may provide comments regarding such documents and other correspondence prior to their submission, which comments [***] will consider in good faith. [***] will provide [***] with copies of all material submissions it makes to, and all material correspondence it receives from, a Regulatory Authority pertaining to a Regulatory Approval of a Shared Product within [***] after receipt. [***] will provide [***] with reasonable advance notice of any meeting or teleconference with any Regulatory Authority with respect to the Shared Products. Subject to Applicable Law, [***] will have the right to participate as an observer in all material meetings, conferences and discussions by [***] with Regulatory Authorities pertaining to Development of the Shared Products or Regulatory Approval of the Shared Products.

3.2.2 Clinical Trials. The JDC will allocate responsibility between the Parties for the conduct of Clinical Trials and the various other Development activities addressed in the Global Development Plan. [***] will have final decision-making authority with respect to the protocol for any Clinical Trial conducted under the Global Development Plan and the statistical analysis plan for any such Clinical Trial. The Party that has responsibility for conducting the Clinical Trial will have the responsibility for the packaging and labeling of clinical drug supplies, unless otherwise agreed by the Parties.

3.2.3 Independent Activities. The Joint Development & Commercialization Agreement will include a mechanism for each Party to propose additional Clinical Trials for inclusion in the Global Development Plan. If the other Party does not agree to include such additional Clinical Trial in the Global Development Plan, the requesting Party may conduct such Clinical Trial at its sole expense (*i.e.* such expenses will not be included as Development Costs); *provided* that neither Party may conduct any Clinical Trial that [***]. The non-requesting Party will not have the right to use the data resulting from such Clinical Trial in a substantive manner as the basis for obtaining new or expanded Regulatory Approval for a Product in the Field or for commercial purposes for a Product in the Field unless and until such Party reimburses the requesting Party for [***] of the Development Costs..

3.3 Diligence. Each Party will use Commercially Reasonable Efforts to execute and to perform, or cause to be performed, the activities assigned to it in the Global Development Plan, and to cooperate with the other Party in carrying out the Global Development Plan in accordance with the timelines therein. Each Party and its Affiliates will conduct its Development activities in good scientific manner and in compliance with Applicable Law. Notwithstanding anything to the contrary contained herein, a Party or its Affiliates will not be obligated to undertake or continue any Development activities with respect to the Shared Products if such Party (or any of its Affiliates) reasonably determines that performance of such Development activity would violate Applicable Law or infringe or misappropriate a Third Party's intellectual property.

ARTICLE 4
MEDICAL AFFAIRS ACTIVITIES

The Parties, acting through the JSC, will develop and agree upon a global medical affairs plan for the Shared Product that describes the Medical Affairs Activities to be conducted in the

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

Territory, key tactics and strategies for implementing those activities, the relative responsibilities of the Parties and the associated budget for such activities (such plan, the "**Medical Affairs Plan**" and such budget, the "**Medical Affairs Budget**"). CRISPR will lead and manage Medical Affairs Activities in the United States and Vertex will lead and manage Medical Affairs Activities outside of the United States, in each case, in accordance with the Medical Affairs Plan. The number of MSLs to be deployed in each jurisdiction will be determined by the JSC at least [***] prior to potential launch.

ARTICLE 5
COMMERCIALIZATION

5.1 Commercialization Plan. The JCC will oversee the Commercialization of Shared Products by the Parties in the Field in the Territory. No later than [***] prior to the anticipated launch of the Shared Product in the first country in the Territory, the JCC will develop and submit to the JSC for approval, a Commercialization plan (the "**Commercialization Plan**") that sets forth the Commercialization activities to be undertaken by the Parties with respect to the Commercialization of the Shared Product in the Territory. The Commercialization Plan may include activities on a region-by-region or country-by-country basis, as determined by the JCC. The JCC will update the Commercialization Plan on [***] (or more frequently as needed) and submit it to the JSC for approval. The Commercialization Plan will include (a) the Global Branding Strategy, (b) a marketing strategy, (c) a communications strategy that includes plans for public relations, conferences and exhibitions and other external meetings, internal meetings and communications, publications and symposia, internet activities and core brand package, (d) a high level operating plan for the implementation of such strategies on [***], including information related to Shared Product positioning, core messages to be communicated and pricing strategies, (e) a detailing strategy, (f) a pricing strategy, (g) all other material activities to be conducted in connection with the Commercialization of the Shared Product in the Field in the Territory and (h) a budget for activities conducted under the Commercialization Plan (the "**Commercialization Budget**"). The Commercialization Plan will include a meaningful role for both Parties. In allocating responsibilities between the Parties, the JCC will take into consideration each Party's expertise, capabilities, staffing and available resources to take on such activities, as well as the Parties' intention to provide CRISPR an opportunity to build and expand its expertise, capabilities, staffing and available resources in connection with performing Commercialization activities allocated to it. CRISPR shall be the Commercializing lead for Shared Products in the United States and Vertex shall be the Commercializing lead for Shared Products outside of the United States. The Commercializing lead, with respect to the United States or outside of the United States, respectively, shall be referred to herein as the "**Lead Commercialization Party**" for such jurisdiction (as applicable, the "**Lead Commercialization Party**" Unless otherwise specified in the Commercialization Plan, the Parties will jointly be responsible for conducting all Commercialization activities outside of the United States, such activities to be determined by the JSC.

5.2 Commercialization Activities.

5.2.1 Training. The Parties will jointly prepare training programs and materials for employees and sales representatives with respect to the Shared Product, with the goal of ensuring compliance with all Applicable Laws and each Party's compliance policies. Each Party will be solely responsible for training its employees and sales representatives in accordance with such training program.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

5.2.2 Global Branding Strategy. The JCC will develop a global branding strategy for Shared Products in the Territory, including, with respect to each Shared Product, a life cycle plan, brand vision, positioning, key messaging, concept and imagery, Trademarks (including name and logos), brand public relations and supporting market research (the "**Global Branding Strategy**") and submit such strategy to the JSC for approval.

5.2.3 Trademarks. The JCC will select a product Trademark for each Shared Product throughout the world consistent with the Global Branding Strategy. Each Shared Product will be promoted and sold in the Territory under the applicable Trademarks.

5.2.4 Marketing. The JCC will agree upon a marketing strategy for the Shared Product, including Shared Product positioning, messaging, appearance and launch sequencing, consistent with the Global Branding Strategy. Marketing activities and responsibilities for each Party will be determined by the JCC.

5.2.5 Managed Markets and Market Access. The JCC will agree upon a strategy for the managed markets and market access for the Shared Product, including, without limitation, payer strategy and account management. Such activities and responsibilities for each Party will be determined by the JCC.

5.2.6 Pricing. The JCC will establish a global pricing strategy for the Shared Product (including list price, targeted net pricing, sales-weighted average discounts and rebates, the approach to pricing with different types of accounts and plans, types of discounts and rebates) in the Territory. The responsibility of each Party regarding the implementation of such global pricing strategy, including negotiating pricing and reimbursement with governments and private payers will be determined by the JCC.

5.2.7 Field Sales. The Parties will jointly promote the Shared Product (including performing sales calls) in the Territory in accordance with the Commercialization Plan. CRISPR will lead and manage the promotion of the Shared Product in the United States. Vertex will have the right provide [***] of the FTES with respect to the Shared Product in the United States. Vertex will lead and manage promotion of the Shared Product outside of the United States and CRISPR will have the right to provide [***] of the FTES with respect to the Shared Product in the Major Market Countries (outside of United States). CRISPR and Vertex will each ensure that its and its Affiliates' sales representatives do not make any representation, statement, warranty or guaranty with respect to the Shared Product that is not consistent with the applicable current package insert of prescribing information or other documentation accompanying or describing a Shared Product, including mutually approved limited warranty and disclaimers, if any. CRISPR and Vertex will each ensure that its and its Affiliates' sales representatives do not make any statements, claims or undertakings to any person with whom they discuss or promote the Shared Products that are not consistent with, or provide or use any labeling, literature or other materials other than those promotional materials currently approved for use by the JCC.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

5.2.8 Distribution and Patient Services. The Parties will jointly be responsible for distribution and patient services for the Shared Product in the Territory, including contracting with applicable service providers, such activities to be determined by the JCC [***] prior to launch of the Shared Product.

5.2.9 Booking Sales; Distribution. CRISPR will invoice, sell and book all sales of Shared Products in the United States and be responsible for warehousing and distributing such Shared Products in the United States. Vertex will invoice, sell and book all sales of Shared Products outside of the United States and be responsible for warehousing and distributing such Shared Products outside of the United States.

5.3 Diligence. Each Party will use Commercially Reasonable Efforts to execute and to perform, or cause to be performed, the activities assigned to it under the Commercialization Plan. Each Party and its Affiliates will conduct its Commercialization activities in compliance with Applicable Law. Notwithstanding anything to the contrary contained herein, a Party or its Affiliates will not be obligated to undertake or continue any Commercialization activities with respect to the Shared Products if such Party (or any of its Affiliates) reasonably determines that performance of such Commercialization activity would violate Applicable Law or infringe or misappropriate a Third Party's intellectual property.

ARTICLE 6
MANUFACTURING

6.1 Quality Agreement. The Parties will meet to negotiate in good faith and agree on quality analysis and control criteria for the Manufacture of the Shared Product within [***] after the effective date of the Joint Development & Commercialization Agreement. The agreed upon criteria will be set forth in a quality agreement containing mutually agreed terms and conditions that are customary for agreements of this type.

6.2 Working Group. The Parties will establish a manufacturing working group (the "**Manufacturing Working Group**") to oversee matters relating to the Manufacture of the Shared Product. The Manufacturing Working Group will report to the JDC for Development-related Manufacturing matters and will report to the JCC for Commercialization-related Manufacturing matters. The Manufacturing Working Group's responsibilities will include: (a) developing plans to transfer Manufacturing-related Know-How between the Parties as needed to facilitate the Manufacture of the Shared Product; (b) establishing standards applicable to each Party's Manufacturing activities and reviewing each Party's performance against such standards; conducting technical reviews, and (c) sharing planning and budgeting information with the JDC and JCC.

6.3 Responsibility. The Parties will share responsibility for Manufacturing clinical supplies of Shared Product as determined by the Manufacturing Working Group. Unless otherwise agreed by the Parties, Vertex will be responsible for Manufacturing commercial supplies of Shared Product.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

ARTICLE 7
ALLOCATION OF NET PROFIT AND NET LOSS

7.1 Allocation. Each Party will be entitled to 50% of the Net Profits or will bear 50% of the Net Loss, as applicable, during the term of the Joint Development & Commercialization Agreement. If either Party elects to Opt-Out (as defined below), the other Party shall pay royalties in accordance with Section 11.4.

7.2 Calculation. Net Profit or Net Loss will be calculated for each Calendar Quarter by determining the [***] and subtracting [***].

7.3 Payment of Expenses; Summary Statements. Subject to reconciliation as provided in Section 7.4, the Party initially incurring Program Expenses will be responsible for and pay for all such Program Expenses so incurred. Each Party will maintain the books and records referred to in Section 7.6 and will accrue all Program Expenses and Net Sales) in accordance with the terms and conditions hereof and in accordance with GAAP. Within [***] after the end of each [***], each Party will submit to the other a non-binding, good faith estimate of the Program Expenses accrued and Net Sales during the just-ended [***]. Within [***] after the end of each [***], each Party will submit to the other a written report reflecting the accrual of Program Expenses and Net Sales during the just-ended [***], except that each Party's submission for the last month of such [***] will be a good faith estimate and not actual amounts (each, a "**Summary Statement**"). Each Summary Statement (after the initial Summary Statement) will reflect an adjustment for the actual amount of the previous [***] as needed. Any reporting and reconciliation of variances between estimated and actual costs and expenses may be delayed by a [***] as reasonably necessary in light of a Party's internal reporting procedures. The Parties' respective Summary Statements will serve as the basis of the Reconciliation Reports prepared by the Parties pursuant to Section 7.4. Upon the request of either Party from time to time, the Parties' respective finance departments, coordinated by the JDC, or JCC, as appropriate, will discuss any questions or issues arising from the Summary Statements, including the basis for the accrual of specific Program Expenses.

7.4 Reconciliation. Vertex will prepare a reconciliation report, as soon as practicable after the receipt of CRISPR's Summary Statement, but in any event within [***] after the end of each [***], accompanied by reasonable supporting documents and calculations sufficient to support each Party's financial reporting obligations, independent auditor requirements and obligations under the Sarbanes-Oxley Act, which reconciles the amounts accrued and reported in each Party's Summary Statement during such [***] and the share of the Net Profits and Net Losses to be allocated to each of the Parties for such [***] in accordance with Section 7.1 (such report, the "**Reconciliation Report**"). Payment to reconcile Net Profit or Net Loss shall be made by the owing Party to the other Party within [***] after such Reconciliation Report is complete.

7.5 Cost Overruns. If a Party's aggregate Development Costs, Medical Affairs Costs or Commercialization Costs in any Calendar Year are likely to exceed or exceed those set forth in the Development Budget, Medical Affairs Budget or Commercialization Budget, as applicable, for all of its activities under the Development Plan, Medical Affairs Plan or Commercialization Plan, as applicable, in such Calendar Year by up to [***] of the aggregate

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

amount set forth in the Development Budget, Medical Affairs Budget or Commercialization Budget, as applicable, such Party will provide the other Party with an explanation for such excess costs and expenses, and such excess costs and expenses will be included in the Development Costs, Medical Affairs Cost or Commercialization Costs, as applicable, and shared by the Parties as provided herein. To the extent a Party's aggregate Development Costs, Medical Affairs Costs or Commercialization Costs, as applicable, exceed those set forth in the Development Budget, Medical Affairs Budget or Commercialization Budget, as applicable, by more than [***], unless otherwise agreed by the Parties, such Expenses will not be shared by the Parties and the Party incurring such Expenses will be solely responsible for such Expenses.

7.6 Books and Records. Each Party will keep and maintain accurate and complete records regarding Program Expenses and Net Sales, during the [***] preceding Calendar Years. Upon [***] prior written notice from the other Party (the "**Auditing Party**"), the Party required to maintain such records (as applicable, the "**Audited Party**") will permit an independent certified public accounting firm of internationally recognized standing, selected by the Auditing Party and reasonably acceptable to the Audited Party, to examine the relevant books and records of the Audited Party and its Affiliates, as may be reasonably necessary to verify the Summary Statements and Reconciliation Reports. An examination by the Auditing Party under this Section 7.6 will occur not more than [***] in any Calendar Year and will be limited to the pertinent books and records for any Calendar Year ending not more than [***] before the date of the request. The accounting firm will be provided access to such books and records at the Audited Party's facility or facilities where such books and records are normally kept and such examination will be conducted during the Audited Party's normal business hours. The Audited Party may require the accounting firm to sign a customary non-disclosure agreement before providing the accounting firm access to its facilities or records. Upon completion of the audit, the accounting firm will provide both the Auditing Party and the Audited Party a written report disclosing whether the applicable Summary Statements and Reconciliation Reports are correct or incorrect and the specific details concerning any discrepancies. No other information will be provided to the Auditing Party. If the report or information submitted by the Audited Party results in an underpayment or overpayment, the Party owing underpaid or overpaid amount will promptly pay such amount to the other Party, and, if, as a result of such inaccurate report or information, such amount is more than [***] of the amount that was owed the Audited Party will reimburse the Auditing Party for the reasonable expense incurred by the Auditing Party in connection with the audit.

ARTICLE 8
ADVERSE EVENTS

8.1 Pharmacovigilance Agreement. The Parties will meet to negotiate in good faith and agree on processes and procedures for sharing safety information within [***] after the effective date of the Joint Development & Commercialization Agreement. The agreed upon processes and procedures will be set forth in a pharmacovigilance agreement (the "**Pharmacovigilance Agreement**") containing mutually agreed terms and conditions that are customary for agreements of this type. The Pharmacovigilance Agreement will include provisions establishing a joint safety oversight working group to oversee the conduct of the Parties' activities under the Pharmacovigilance Agreement and to coordinate the Parties' interactions with respect to pharmacovigilance activities.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

8.2 Global Safety Database. The JCC will establish pharmacovigilance and safety strategy for the Shared Product. Pursuant to such strategy, Vertex will establish the global safety database for such Shared Product. Vertex will maintain a global database of safety information including, but not limited to, adverse events and pregnancy reports for such Shared Product, which will be used for regulatory reporting and responses to safety queries from Regulatory Authorities by both Parties. CRISPR will, and will cause its Affiliates to, transfer all adverse events information in its or their possession or control to the global safety database within a mutually agreed period of time that provides Vertex with sufficient time to enter all of the data and to obtain validation of the database.

8.3 Risk Management and Signal Detection Activities. Vertex shall be primarily responsible for all signal detection and risk management activities for Shared Products. These signal detection activities shall include, but are not limited to, proactive review and evaluation of all safety information from the Global Safety Database (including by way of example, Individual Case Safety Reports, aggregate safety information, literature reports, and non-clinical data).

ARTICLE 9
SUBCONTRACTING

Each Party may subcontract the performance of any activities undertaken by such Party in accordance with the Global Development Plan, Medical Affairs Plan or Commercialization Plan to one or more Third Parties (each such Third Party, a "**Subcontractor**") pursuant to a written agreement (a "**Subcontract**"). Notwithstanding the foregoing, if either Party desires to subcontract any such activities, it will first discuss the matter with the other Party and reasonably consider using the other Party for such subcontracted activities, taking into account the capabilities of the other Party and potential impact on costs, as a potential alternative to subcontracting such activities to a Third Party. If, following such discussion a Party still desires to subcontract the performance of any such activity to one or more Third Parties, it may proceed to do so; *provided*, that prior to entering into any Subcontract which the subcontracting Party reasonably anticipates will entail payments to the Subcontractor in excess of [***] with respect to subcontracted activities under the Joint Development & Commercialization Agreement, the subcontracting Party will obtain the JSC's approval, not to be unreasonably withheld, of use of the proposed Subcontractor to conduct the activities proposed to be subcontracted prior to execution of the applicable Subcontract.

ARTICLE 10
LICENSES; IP

10.1 License Grants. Vertex will grant CRISPR a co-exclusive (with Vertex) license under Vertex's and its Affiliates' interest in the Licensed Vertex Know-How and Licensed Vertex Patents, with the right to Sublicense through multiple tiers (subject to Section 10.2), to Research, Develop, Manufacture, have Manufactured, use, keep, sell, offer for sale, import, export and Commercialize Shared Products in the Field in the Territory. Additionally, the license rights granted by CRISPR to Vertex under Section 5.3.1 of the Agreement will be modified to be co-exclusive (with CRISPR) for Shared Products in the Territory.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

10.2 Sublicensing. Subject to the rights granted or retained by the Parties under the Joint Development & Collaboration Agreement, either Party may Sublicense (through multiple tiers) to its Affiliates or Third Parties any and all rights granted to it by the other Party or retained by such Party with respect to the Research, Development, Manufacture and Commercialization of the Shared Products; *provided*, that neither Party may grant any such Sublicense in a Major Market Country without the prior written consent of the other Party; and *provided*, *further*, that if either Party intends to Sublicense any such rights in any country, it will discuss the matter with the Other Party and in good faith consider using the Other Party to conduct any sublicensed activities. If a Party grants any such Sublicense it will remain responsible for its obligations under the Joint Development & Commercialization Agreement and will be responsible for the performance of the relevant sublicensee.

10.3 [***]. If a Party believes, in its reasonable judgment, that it may be necessary to obtain rights under any [***] in order to Research, Develop, Manufacture or Commercialize a Shared Product in the Field, such Party will promptly notify the other Party and the Parties will discuss such matter in good faith. Unless otherwise agreed, [***] will have the first right to enter into a license with the relevant Third Party to acquire rights to the [***]. If the Parties are unable to agree on whether any Know-How or Patents are [***], the Party that believes such rights are necessary may enter into a license with the relevant Third Party; *provided*, that [***] unless and until the other Party agrees, or as determined by arbitration or other dispute resolution mechanisms to [***].

10.4 Trademarks. The Lead Commercialization Party will own and retain all rights to Trademarks for Shared Products in their respective jurisdiction, and all goodwill associated with or attached thereto arising out of the use thereof by the Parties, their Affiliates and Sublicensees will inure to the benefit of such Lead Commercialization Party. Each non-Lead Commercialization Party, on behalf of itself and its Affiliates, will assign to the Lead Commercialization Party or its relevant Affiliate all right, title and interest in and to such Shared Product Trademarks and goodwill in the relevant jurisdiction. The non-Lead Commercialization Party will not contest, oppose or challenge the Lead Commercialization Party's ownership of such Shared Product Trademarks in the relevant jurisdiction. The Lead Commercialization Party will own rights to any Internet domain names incorporating any Trademark for the Shared Product, or any variation or part of any such Trademark, as its URL address or any part of such address in the applicable jurisdiction. The Lead Commercialization Party will use Commercially Reasonable Efforts to register, maintain and enforce the Trademarks for the Shared Product in the relevant jurisdiction.

ARTICLE 11
TERM; TERMINATION

11.1 Term. The term of the Joint Development & Commercialization Agreement will commence on the execution of the Joint Development & Commercialization Agreement and continue in full force and effect until there is no longer a Global Development Plan or Commercialization Plan contemplating Development or Commercialization of a Shared Product in the Territory, unless earlier terminated as provided below.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

11.2 Termination Generally. The provisions of Sections 11.2.1, 11.2.3, 11.2.4 and 11.2.5 of the Agreement will apply to the Joint Development & Commercialization Agreement, *mutatis mutandis*.

11.3 Alternative Remedies. The alternative remedy provisions of Section 11.3 of the Agreement will not apply to Hemoglobinopathy Targets or [***] or to the Joint Development & Commercialization Agreement.

11.4 Opt-Out. After [***] for a Shared Product directed to a particular Collaboration Target, either Party may opt out of the Joint Development & Commercialization Agreement for all Shared Products directed to such Collaboration Target upon [***] notice to the other Party ("**Opt-Out**"). The other Party shall pay such opting out Party royalties ("**Opt-Out Royalties**") in accordance with this Section 11.4 and the terms of Sections 7.5.2, 7.5.3, 7.5.4 and 7.5.5 of the Strategic Collaboration Option and License Agreement shall apply to such royalties, *mutatis mutandis.* The applicable royalty rates shall be determined in accordance with the table set forth below based on the timing of the Opt-out Notice. Upon the other Party's receipt of such notice, all rights and obligations under the Joint Development & Commercialization Agreement with respect to Shared Products directed to such Collaboration Target shall terminate. If the opting out Party is CRISPR, such Shared Product(s) shall be deemed Product(s) directed to a Collaboration Target other than a Hemoglobinopathy Target [***] under the Strategic Collaboration, Option and License Agreement, and the terms and conditions of such agreement shall apply with respect to all Products directed to the opted out Collaboration Target; provided, that in lieu of the royalty rates payable under Section 7.5.1 of such agreement Vertex shall pay royalties at the rates set forth in this Section 11.4. If the opting out Party is Vertex, the Parties shall negotiate in good faith a termination agreement for all Products directed to such opted out Collaboration Target, including, without limitation, reasonable diligence obligations and obligations of CRISPR for sharing of information regarding such Products with Vertex, which obligations will be substantially similar to the obligations imposed by Vertex under the Joint Development & Commercialization Agreement. For the avoidance of doubt, the allocation of Net Profits and Net Loss pursuant to Section 7.1 shall terminate upon the Opt-Out.

Timing of Opt Out	Net Sales (in Dollars) for such Shared Products in the Territory	Opt-Out Royalty Rates as a Percentage (%) of Net Sales of such Shared Products
[***]	[***]	[***]
	[***]	[***]
	[***]	[***]
	[***]	[***]
[***]	[***]	[***]
	[***]	[***]
	[***]	[***]
	[***]	[***]

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

ARTICLE 12
INDEMNITY

The Joint Development & Commercialization Agreement will include commercially reasonable indemnity provisions, which will include (but not be limited to) an obligation for each Party to indemnify the other Party from, against and in respect of any and all Liability incurred or suffered by the other Party to the extent resulting from: (a) any breach of, or inaccuracy in, any representation or warranty made by the indemnifying Party, or any breach or violation by the indemnifying Party of any covenant or agreement in the Joint Development & Commercialization Agreement; or (b) the negligence or intentional misconduct of, or violation of Applicable Law (including off-label promotion) by, the indemnifying Party, any of its Affiliates or Sublicensees, or any of their respective directors, officers, employees and agents, in performing its obligations or exercising its rights under the Joint Development & Commercialization Agreement.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE G

Schedule H

CRISPR In-License Agreements

- License Agreement of April 15, 2014 by and between Emmanuelle Marie Charpentier and Crispr Therapeutics AG
- License Agreement of April 15, 2014 by and between Emmanuelle Marie Charpentier and Tracr Hematology Ltd
- License Agreement of November 23, 2014 by and between Childrens Medical Center Corporation and Tracr Hematology Ltd

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE H

Schedule I

Baseball Arbitration Procedures

Selection of Baseball Expert and Submission of Positions. The Parties will select and agree upon a mutually acceptable independent Third Party expert who is neutral, disinterested and impartial, and has the experience specified in Schedule G for the applicable dispute (the "**Baseball Expert**"). If the Parties are unable to mutually agree upon a Baseball Expert within [***] following the delivery of the request for Baseball Arbitration, then upon request by either Party, the Baseball Expert will be an arbitrator appointed by Judicial and Mediation Services ("**JAMS**"), which arbitrator need not have the above-described experience. Once the Baseball Expert has been selected, each Party will within [***] following selection of the Baseball Expert provide the Baseball Expert and the other Party with a written report setting forth its position with respect to the substance of the dispute and may submit a revised or updated report and position to the Baseball Expert within [***] of receiving the other Party's report. If so requested by the Baseball Expert, each Party will make oral submissions to the Baseball Expert based on such Party's written report, and each Party will have the right to be present during any such oral submissions.

JAMS Supervision. In the event the Baseball Expert is a JAMS arbitrator selected by JAMS as provided in this Schedule I, the matter will be conducted as a binding arbitration in accordance with JAMS procedures, as modified by this Schedule I (including that the arbitrator will adopt as his or her decision the position of one Party or the other, as described below). In such event, the arbitrator may retain a Third Party expert with the same experience specified in Schedule F for the Baseball Expert to assist in rendering such decision, and the expenses of any such expert will be shared by the Parties as costs of the arbitration as provided in this Schedule I.

Determination by the Baseball Expert. The Baseball Expert will, no later than [***] after the last submission of the written reports and, if any, oral submissions, select one of the Party's positions as his or her final decision, and will not have the authority to modify either Party's position or render any substantive decision other than to so select the position of either Party as set forth in their respective written report (as initially submitted, or as revised in accordance with this Schedule I, as applicable). The decision of the Baseball Expert will be the sole, exclusive and binding remedy between them regarding the dispute submitted to such Baseball Expert.

Location; Costs. Unless otherwise mutually agreed upon by the Parties, the in-person portion (if any) of such proceedings will be conducted in Boston, Massachusetts. [***].

Timetable for Completion in [***]. The Parties will use, and will direct the Baseball Expert to use, commercially reasonable efforts to resolve a dispute within [***] after the selection of the Baseball Expert, or if resolution within [***] is not reasonably achievable, as determined by the Baseball Expert, then as soon thereafter as is reasonably practicable.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE I

Schedule J

Identified Third Party IP

U.S. Patent No.	U.S. Patent Application No.	Filing Data
U.S. 8,697,359	14/054,414	Oct. 15, 2013
U.S 8,771,945	14/183,429	Feb. 18, 2014
U.S. 8,795,965	14/183,486	Feb. 18, 2014
U.S. 8,865,406	14/222,930	Mar. 24, 2014
U.S. 8,906,616	14/290,575	May 29, 2014
U.S. 8,895,308	14/293,498	Jun. 02, 2014
U.S. 8,945,839	14/256,912	Apr. 18, 2014
U.S. 8,889,356	14/183,471	Feb. 18, 2014
U.S. 8,932,814	14/258,458	Apr. 22, 2014
U.S. 8,871,445	14/259,420	Apr. 23, 2014

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE J

Schedule K

Patent Costs

	Prior to Option Exercise	After Option Exercise
CRISPR Platform Technology Patents	[***]	[***]
CRISPR Background Patents	[***]	[***]
CRISPR Program Patent	[***]	[***]
[***] Patents	[***]	[***]
[***] Patents	[***]	[***]
[***] Joint Program Patents	[***]	[***]
Other Joint Program Patent	[***]	[***]
[***] Joint Program Patents	[***]	[***]

* Either Party may decline to pay its share of costs for Prosecuting and Maintaining any Other Joint Program Patents in a particular country or particular countries, in which case, the declining Party will, and will cause its Affiliates to, assign to the other Party (or, if such assignment is not possible, grant a fully-paid exclusive license in) all of their rights, titles and interests in and to such Other Joint Program Patents.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE K

Schedule L

CRISPR Disclosures

9.2.2

See 9.2.9 regarding [***] (as defined in 9.2.9).

9.2.5.

See 9.2.9 regarding [***].

9.2.6.

See 9.2.9 regarding [***].

9.2.8.

See 9.2.9 regarding [***]; for the cases listed in Section A, CRISPR is a licensee.

9.2.9.

CRISPR Platform Technology Patents

A. CRISPR Platform Technology Patents Licensed from Emmanuelle Charpentier

Foundational patent applications related to Crispr-Cas9 gene editing technologies licensed to CRISPR by Emmanuelle Charpentier:

Serial #	*Filing Date*	*Country/Jurisdiction*
61/652,086	*25 May 2012*	*United States*
61/716,256	*19 Oct 2012*	*United States*
61/757,640	*28 Jan 2013*	*United States*
61/765,576	*15 Feb 2013*	*United States*
13/842,859	*15 Mar 2013*	*United States*
14/403,475	*14 Nov 2014*	*United States*

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

14/685,502	*13 Apr 2015*	*United States*
14/685,504	*13 Apr 2015*	*United States*
14/685,513	*13 Apr 2015*	*United States*
14/685,514	*13 Apr 2015*	*United States*
14/685,516	*13 Apr 2015*	*United States*
PCT/US2013/032589	*15 Mar 2013*	*(International)*
140780	*15 Mar 2013*	*Algeria*
2013266968	*15 Mar 2013*	*Australia*
BR1120140299441-0	*15 Mar 2013*	*Brazil*
2872241	*15 Mar 2013*	*Canada*
2014-03208	*15 Mar 2013*	*Chile*
2013800389206	*15 Mar 2013*	*China*
14-259531	*15 Mar 2013*	*Colombia*
014-0538	*15 Mar 2013*	*Costa Rica*
IEPI-2014-28704	*15 Mar 2013*	*Ecuador*
PCT1887/2014	*15 Mar 2013*	*Egypt*
201401319	*15 Mar 2013*	*Eurasia*
13793997.1	*15 Mar 2013*	*European Pat. Office*
13674/01-14	*15 Mar 2013*	*Georgia*
1420270.9	*15 Mar 2013*	*Great Britain / UK*
2995/KOLNP/2014	*15 Mar 2013*	*India*
P00201407783	*15 Mar 2013*	*Indonesia*
235461	*15 Mar 2013*	*Israel*
2015514015	*15 Mar 2013*	*Japan*

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

KE/P/2014/002178	*15 Mar 2013*	*Kenya*
10-2014-7036096	*15 Mar 2013*	*Korea, South*
4959/2014	*15 Mar 2013*	*Libya*
37663	*15 Mar 2013*	*Morocco*
MX/a/2014/014477	*15 Mar 2013*	*Mexico*
PI 2014003102	*15 Mar 2013*	*Malaysia*
701326	*15 Mar 2013*	*New Zealand*
OM/P/2014/00268	*15 Mar 2013*	*Oman*
90441-01	*15 Mar 2013*	*Panama*
002211-2014/DIN	*15 Mar 2013*	*Peru*
1-2014-502574	*15 Mar 2013*	*Philippines*
QA/201411/00400	*15 Mar 2013*	*Qatar*
11201407702X	*15 Mar 2013*	*Singapore*
2014/07881	*15 Mar 2013*	*South Africa*
2014120156	*15 Mar 2013*	*Syria*
1401007063	*15 Mar 2013*	*Thailand*
2014/0493	*15 Mar 2013*	*Tunisia*
a201413835	*15 Mar 2013*	*Ukraine*
P1296/14	*15 Mar 2013*	*United Arab Emirates*
IAP20140559	*15 Mar 2013*	*Uzbekistan*
1-2014-04335	*15 Mar 2013*	*Vietnam*

The named applicant co-owners of the foregoing patent applications are Dr. Emmanuelle Charpentier, the Regents of the University of California and the University of Vienna.

Emmanuelle Charpentier has licensed her rights in the inventions to CRISPR AG and TRACR Hematology Ltd. for the commercialisation of therapeutic products; and has retained the non-transferable right, without the right to license or sublicense, to use the inventions for her own research purposes and in research collaborations.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

[***].

[***].

B. CRISPR Platform Technology Patents Owned by the Company

The following cases represent additional CRISPR Platform Technology Patents related to various improvements and uses of Crispr-Cas9 gene editing, and are owned by CRISPR.

61/905,835	*18 Nov 2013*	*United States*
PCT/EP2014/074813	*17 Nov 2014*	*International*
62/119,754	*23 Feb 2015*	*United States*
62/119,774	*23 Feb 2015*	*United States*

CRISPR Background Technology Patents

The Patents listed on the attached Appendix 1 of Schedule I are CRISPR Background Technology Patents related to [***].

9.2.12

The Charpentier-licensed IP identified in 9.2.9. has been the subject of Third Party observations filed in the following patent offices: European Patent Office, the UK Intellectual Property Office, the US Patent and Trademark Office and the World Intellectual Property Office ("Third Party Observations").

The Broad Institute is the applicant or owner of a series of competing cases claiming Crispr-Cas9 gene editing (which cases generally claim priority to one or more provisional applications identifying at least Feng Zhang as an inventor, including without limitation U.S. provisional patent application 61/736,527, dated December 12, 2012, as well as foreign counterparts thereof). The Broad Institute has filed Information Disclosure Statements in its various U.S. cases attacking the foundational IP, and it and/or related entities are considered to be among the parties filing third party observations.

The Charpentier-UC applicants have filed a Suggestion of Interference Pursuant to 37 C.F.R. § 41.202 with the U.S. Patent & Trademark Office in connection with numerous U.S. patents issued to the Broad Institute (the "Potential Interference"). The Suggestion of Interference was filed in U.S. Serial No. 13/842,859 on April 13, 2015.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

The patent applications listed below and counterparts thereof generally include claims to Crispr-Cas9 gene editing with priority applications filed in 2012, and there have since been numerous additional patent applications claiming variations of Crispr-Cas gene editing and various uses of Crispr-Cas gene editing for the development of potential products filed after 2012 that are readily identifiable by searching patent databases for Crispr-Cas gene editing, which Third Party applicants, applications or patents (individually and collectively "Third Party IP") could become involved in challenges related to the Licensed Technology and/or to products to be developed pursuant to such technology (together with the Third Party Observations and the Potential Interference referred to in the preceding paragraphs being individually and collectively the "Third Party Matters"):

- *Vilnius PCT/LT2013/000006filed 15 Mar 2013 (WO 2013/141680) and PCT/US2013/033106filed 20 Mar 2013 (WO 2013/142578) First priority filing 20 Mar 2012*

- *Toolgen PCT/KR2013/009488 filed 23 Oct 2013 (WO/2014/065596) First priority filing 23 Oct 2012*

- *Sigma PCT/US2013/073307filed 05 Dec 2013 (WO/2014/089290) First priority filing 6 Dec 2012*

- *Broad PCT/US2013/074743 (WO/2014/093661) and other PCT applications First priority filing 12 Dec 2012*

- *Harvard PCT/US2013/075317 (WO/2014/099744) and other PCT applications First priority filing 17 Dec 2012*

9.2.14.

See 9.2.9, in connection with which it is noted that CRISPR is not an owner of the Platform Technology Patents listed in Part A, nor of the Background Patents listed.

9.2.15

See 9.2.9, in connection with which it is noted that Charpentier is a co-owner of numerous patent applications as noted, and other co-owners and their licensees and certain governmental and non-profit entities also have rights in such cases.

9.2.16

See 9.2.9, in connection with which it is noted that Charpentier is a co-owner (and co-developer) of know-how related to the technologies described in the patent applications as noted, and therefore other co-owners and their licensees and certain non-profit entities have also had access to such know-how, as well as patent applications.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

9.2.17

See 9.2.9, in connection with which it is noted that Charpentier is a co-owner of numerous patent applications as noted with the University of California, which has indicated that the invention was made with government support under Grant No. GM081879 awarded by the National Institutes of Health, and that the U.S. government has certain rights in the invention; [***].

9.2.18

See 9.2.12 regarding Third Party IP (as defined in 9.1.12).

9.2.19

See 9.2.12 regarding Third Party Matters (as defined in 9.1.12)

9.2.20

See 9.2.12 regarding Third Party Matters.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

Appendix 1
Patent Rights

[***]

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

Schedule M

Press Release

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE L

Vertex and CRISPR Therapeutics Establish Collaboration to Use CRISPR-Cas9 Gene Editing Technology to Discover and Develop New Treatments for Genetic Diseases

-Gene editing technology to be used to discover treatments to address the mutations and genes known to cause and contribute to cystic fibrosis-

-Vertex and CRISPR to utilize gene editing approach to discover treatments for genetic diseases, including sickle cell disease-

-Companies establish four-year research collaboration; CRISPR to receive $105 million up- front payment, of which $30 million is an equity investment, with potential for additional milestones and royalty payments-

BOSTON AND CAMBRIDGE, MASS - October XX, 2015 - Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) and CRISPR Therapeutics today announced that the two companies have entered into a strategic research collaboration focused on the use of CRISPR's gene editing technology, known as CRISPR-Cas9, to discover and develop potential new treatments aimed at the underlying genetic causes of human disease. The collaboration will evaluate the use of CRISPR-Cas9 across multiple diseases where targets have been validated through human genetics. Vertex and CRISPR will focus their initial gene editing research on discovering treatments to address the mutations and genes known to cause and contribute to cystic fibrosis and sickle cell disease. Vertex and CRISPR will also evaluate a specified number of other genetic targets as part of the collaboration. Vertex will have exclusive rights to license up to six new CRISPR-Cas9-based treatments that emerge from the collaboration. As part of the collaboration, Vertex made an up-front commitment of $105 million to CRISPR, including $75 million in cash and a $30 million equity investment. CRISPR is also eligible to receive future development, regulatory and sales milestones and royalty payments on future sales.

"CRISPR-Cas9 is an important scientific and technological breakthrough that holds significant promise for the future discovery of potentially transformative treatments for many genetic diseases," said David Altshuler, M.D., Ph.D., Vertex's Executive Vice President, Global Research and Chief Scientific Officer. "As a company founded on innovative science, we're excited to begin this collaboration with CRISPR, as it puts us at the forefront of what we believe may be a fundamental change in the future treatment of disease — using gene editing technologies to address the underlying genetic causes of many diseases."

"Vertex has a track record of developing innovative medicines for cystic fibrosis and other serious diseases, making them a great partner to accelerate the therapeutic promise of gene editing," said Rodger Novak, M.D., Chief Executive Officer of CRISPR Therapeutics. "For CRISPR, this collaboration validates the potential for gene editing in human therapeutics and provides important financial support for continued investment in our platform and proprietary pipeline of programs."

About the Collaboration

Under the terms of the collaboration, Vertex and CRISPR will jointly use the CRISPR-Cas9 technology to discover and develop potential new treatments that correct defects in specific gene targets known to cause or contribute to particular diseases. The initial focus of the collaboration

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE M

will be on the use of CRISPR-Cas9 to potentially correct the mutations in the cystic fibrosis transmembrane conductance regulator (CFTR) gene known to result in the defective protein that causes CF and to edit other genes that contribute to the disease. Additionally, the companies will seek to discover and develop gene-based treatments for hemoglobinopathies, including sickle cell disease. Additional discovery efforts focused on a specified number of other genetic targets will also be conducted under the collaboration. Discovery activities will be conducted primarily by CRISPR, and the related expenses will be fully funded by Vertex. Vertex has the option to an exclusive license for up to six gene-based treatments that emerge from the four-year research collaboration. Vertex will fund 100 percent of the development expenses of licensed treatments. For each of the up to six treatments in-licensed for development, Vertex will pay future development, regulatory and sales milestones of up to $420 million as well as royalty payments on future sales.

Vertex and CRISPR will collaborate on the research, development and commercialization of treatments for hemoglobinopathies that emerge from the collaboration. Specifically for hemoglobinopathies, including treatments for sickle cell disease, Vertex and CRISPR will equally share all research and development costs and sales, with CRISPR Therapeutics leading commercialization efforts in the U.S. For all other diseases, Vertex will lead all development and global commercialization activities.

Vertex will pay CRISPR $75 million in cash as part of its up-front commitment. Vertex will also provide a $30 million investment in CRISPR, which is a private company. The investment will provide Vertex with an ownership stake in CRISPR. The collaboration also provides Vertex with an observer seat on the CRISPR Board of Directors, which will be filled by Dr. Altshuler.

About Gene Editing with CRISPR-Cas9

"**CRISPR**" refers to Clustered Regularly Interspaced Short Palindromic Repeats that occur in the genome of certain bacteria, from which the system was discovered. Cas9 is a CRISPR- associated endonuclease (an enzyme) known to act as the "**molecular scissors**" that cut and edit, or correct, disease-associated DNA in a cell. A guide RNA directs the Cas9 molecular scissors to the exact site of the disease-associated mutation. Once the molecular scissors make a cut in the DNA, additional cellular mechanisms and exogenously added DNA will use the cell's own machinery and other elements to specifically 'repair' the DNA. This technology may offer the ability to directly modify or correct the underlying disease-associated changes in the human genome for the potential treatment of a large number of both rare and common diseases.

Emmanuelle Charpentier, Ph.D., one of CRISPR Therapeutics' scientific founders, co-invented the CRISPR-Cas9 technology and is the recipient of multiple prestigious awards in recognition of the potential contribution that the CRISPR-Cas9 technology may have on global health. The other scientific co-founders of CRISPR are Craig Mello, Ph.D., Chad Cowan, Ph.D., Matthew Porteus, M.D., Ph.D., and Daniel Anderson, Ph.D.

About Vertex

Vertex is a global biotechnology company that aims to discover, develop and commercialize innovative medicines so people with serious diseases can lead better lives. In addition to our clinical development programs focused on cystic fibrosis, Vertex has more than a dozen ongoing research programs aimed at other serious and life-threatening diseases.

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE M

Founded in 1989 in Cambridge, Mass., Vertex today has research and development sites and commercial offices in the United States, Europe, Canada and Australia. For five years in a row, *Science* magazine has named Vertex one of its Top Employers in the life sciences. For additional information and the latest updates from the company, please visit www.vrtx.com.

About CRISPR Therapeutics

The mission of CRISPR Therapeutics is to develop transformative gene-based medicines for patients with serious diseases. Our therapeutic approach aims to cure diseases at the molecular level using the breakthrough gene editing technology called CRISPR-Cas9. With our multi- disciplinary team of world-renowned academics, drug developers and clinicians, we are uniquely positioned to translate CRISPR-Cas9 technology into human therapeutics. We have licensed the foundational CRISPR-Cas9 patent estate for human therapeutic use from our scientific founder, Dr. Emmanuelle Charpentier. We are headquartered in Basel, Switzerland, our R&D operations are in Cambridge, Massachusetts and we have corporate offices in London, United Kingdom. www.crisprtx.com

Special Note Regarding Forward-looking Statements

This press release contains forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, including, without limitation, Dr. Altshuler's statements in the second paragraph of the press release, Dr. Novak's statements in the third paragraph of the press release and the information provided regarding the future development of treatments for genetic diseases using the CRISPR-Cas9 technology. While Vertex believes the forward-looking statements contained in this press release are accurate, these forward-looking statements represent the company's beliefs only as of the date of this press release and there are a number of factors that could cause actual events or results to differ materially from those indicated by such forward-looking statements. Those risks and uncertainties include, among other things, that data may not support further development of the gene-based treatments subject to the collaboration due to safety, efficacy or other reasons, and other risks listed under Risk Factors in Vertex's annual report and quarterly reports filed with the Securities and Exchange Commission and available through the company's website at www.vrtx.com. Vertex disclaims any obligation to update the information contained in this press release as new information becomes available.

(VRTX-GEN)

Vertex Pharmaceuticals Incorporated

Investors:

Michael Partridge, 617-341-6108 or
Kelly Lewis, 617-961-7530 or
Eric Rojas, 617-961-7205

or

Media: mediainfo@vrtx.com
Zach Barber: 617-341-6992

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE M

CRISPR MEDIA CONTACTS:

MacDougall Biomedical Communications
Kari Watson in US - kwatson@macbiocom.com +1 (781) 235-3060
Anca Alexandra in Europe - aalexandru@macbiocom.com +49 (89) 2424-3494

[***] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

SCHEDULE M