Risk Factors Comparison 2024-02-21 to 2023-02-21 Form: 10-K

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You should carefully consider the following risk factors, together with all other information in this report, including our financial statements and notes thereto, and in our other filings with the Securities and Exchange Commission. If any of the following risks, or other risks not presently known to us or that we currently believe to not be significant, develop into actual events, then our business, financial condition, results of operations or prospects could be materially adversely affected. If that happens, the market price of our common shares could decline, and shareholders may lose all or part of their investment. Risks Related to Our Financial Position and Need for Additional Capital We Have Incurred Significant Operating Losses Since Our Inception And Anticipate That We Will Incur Continued Losses For The Foreseeable Future. We have funded our operations through public and private offerings of our equity securities, private placements of our preferred shares, convertible loans and collaboration agreements with strategic partners. While we were profitable for the year ended December 31, 2021 due to an upfront payment associated with our collaboration with Vertex, we do not expect to be profitable in future years. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our shareholders' deficit and working capital. We anticipate that our expenses will increase substantially if and as we: • continue our clinical trials for our various programs; • continue our current research programs and our preclinical and clinical development of product candidates; • seek to identify additional research programs and additional product candidates; • conduct IND supporting preclinical studies and initiate clinical trials for our product candidates; • initiate preclinical studies and clinical trials for any other product candidates we identify and choose to develop; • expand, maintain, enforce and / or defend our intellectual property estate; • seek marketing approvals for any of our product candidates that successfully complete clinical trials; • further develop our gene editing technology; • hire additional clinical, quality control and scientific personnel; • establish, expand or contract for manufacturing capabilities; • add operational, financial and management information systems and personnel, including personnel to support our product candidate development; • acquire or in- license other technologies; and ~~,~~ • establish a sales, marketing, and distribution infrastructure to commercialize any products for which we **, or our partners and collaborators,** may obtain **or have obtained** marketing approval. As a result, we expect to continue to incur significant and increasing operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing gene editing product candidates, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis. We Will Need To Raise Substantial Additional Funding, Which Will Dilute Our Shareholders. If We Are Unable To Raise Capital When Needed, We Would Be Forced To Delay, Reduce Or Eliminate Some Of Our Product Development Programs Or Commercialization Efforts. The development of gene editing product candidates is capital intensive. We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development of, initiate preclinical studies and clinical trials for and seek marketing approval for our product candidates. In addition, **since we and our partner, Vertex, received the first- ever marketing approval of a CRISPR- based gene editing therapy, CASGEVY, in 2023 in certain jurisdictions, and have received a subsequent approval in 2024, and** if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution to the extent that such sales, marketing, manufacturing and distribution are not the responsibility of Bayer, ~~ViaCyte,~~ Vertex or other future collaborators. We may also need to raise additional funds sooner if we choose to pursue additional indications or geographies for our product candidates or otherwise expand more rapidly than we presently anticipate. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate certain of our research and development programs or future commercialization efforts. As of December 31, **2023 and** 2022 ~~and 2021~~, we had cash, cash equivalents and marketable securities of approximately $ 1, **695. 7 million and $ 1,** 868. 4 ~~million and $ 2, 379. 1~~ million, respectively. With our cash, cash equivalents and marketable securities on hand as of December 31, ~~2022~~ **2023** , we expect cash, cash equivalents and marketable securities to be sufficient to fund our current operating plan through at least the next 24 months. Our future capital requirements will depend on, and could increase significantly as a result of, many factors, including: • the scope, progress, results and costs of clinical trials, drug discovery, preclinical development, and laboratory testing for our wholly owned and partnered product candidates; • the scope, prioritization and number of our research and development programs; • the costs, timing and outcome of regulatory review of our product candidates; • the costs of establishing and maintaining a supply chain for the development and manufacture of our product candidates; • the success of our collaborations with Vertex ~~and ViaCyte~~; • our ability to establish and maintain additional collaborations on favorable terms, if at all; • the achievement of milestones or occurrence of other developments that trigger payments under any additional collaboration agreements we obtain; • the extent to which we are obligated to reimburse, or entitled to reimbursement of, clinical trial costs under future collaboration agreements, if any; • the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property- related claims; • the costs of fulfilling our obligations under the Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement to reimburse other parties for costs incurred in connection with the prosecution and maintenance of associated patent rights; • the extent to which we acquire or in- license other product candidates and technologies; • the costs of establishing or contracting for manufacturing capabilities if we obtain regulatory approvals to manufacture our product candidates; • the costs of establishing or contracting for sales and marketing capabilities if we obtain regulatory approvals to market our product

candidates; and • our ability to establish and maintain healthcare coverage and adequate reimbursement. Any additional fundraising efforts may divert our management from their day- to- day activities, which may adversely affect our ability to develop and commercialize our product candidates. We cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our shareholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our shareholders and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a shareholder. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborators or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects. If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product candidate, or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations. We Have A Limited Operating History, Which May Make It Difficult To Evaluate Our Technology And Product Development Capabilities And Predict Our Future Performance. Our overall development efforts are ongoing and the first clinical trial for any of our product candidates was initiated at the end of 2018. ~~Our~~ **In general, our** programs require preclinical and clinical development; regulatory and marketing approval in multiple jurisdictions; obtaining manufacturing supply, capacity, and expertise; building ~~of~~ a commercial organization; substantial investment and significant marketing efforts before we generate any revenue from product sales. Our product candidates must be approved for marketing by the FDA or certain other health regulatory agencies, including the EMA, before we may commercialize any product. **Although we and our partner, Vertex, received the first- ever marketing approval of a CRISPR- based gene- editing therapy, CASGEVY, in 2023 in certain jurisdictions, and have received a subsequent approval in 2024, we cannot guarantee we and Vertex will receive additional marketing approvals for CASGEVY or we will receive marketing approvals for our other product candidates in the future. For additional information, see also " Risk Factors — Risks Related to Our Relationships with Third Parties — We Have Partnered With Vertex On Our Lead Program CASGEVY; Vertex Has Significant Control Over The CASGEVY Program " and " Risk Factors — Risks Related to Our Business, Technology and Industry — If We Are Unable To Advance Our Product Candidates To Clinical Development, Obtain Regulatory Approval And Ultimately Commercialize Our Product Candidates, Or Experience Significant Delays In Doing So, Our Business Will Be Materially Harmed. "** Our limited operating history, particularly in light of the rapidly evolving gene editing field, may make it difficult to evaluate our technology and industry and predict our future performance. Our short history as an operating company makes any assessment of our future success or viability subject to significant uncertainty. We will encounter risks and difficulties frequently experienced by early stage companies in rapidly evolving fields. If we do not address these risks successfully, our business will suffer. Similarly, we expect that our financial condition and operating results will fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. As a result, our shareholders should not rely upon the results of any quarterly or annual period as an indicator of future operating performance. In addition, as a development stage company, we have encountered unforeseen expenses, difficulties, complications, delays and other known and unknown circumstances. As we advance our product candidates, we will need to continue to transition from a company with a research focus to a company ~~capable of supporting clinical~~ **focused on researching,** ~~development~~ **developing** ~~and if successful~~ , **manufacturing and** ~~commercial~~ **commercializing** ~~activities~~ **product candidates, as applicable** . We may not be successful in such a transition. Our Ability To Use Tax Loss Carryforwards In Switzerland May Be Limited. Under Swiss law, we are entitled to carry forward losses we incur for a period of seven years and we can offset future profits, if any, against such losses. Tax losses are only finally assessed by the tax authorities when offset with taxable profit (which will not be the case if we are loss making). If not used, these tax losses will expire seven years after the year in which they occurred. Due to our limited income, there is a high risk that the tax loss carry forwards will expire partly or entirely and as a result they would not be applied to reduce future cash tax payments. ~~As of January 1, 2020, the Canton of Zug introduced its new law on the Swiss corporate tax reform. According to this new law, the ordinary effective corporate income tax rate amount was reduced to 11. 91 % (federal, cantonal and communal) in 2020 and was subsequently reduced to 11. 85 % in 2021. Risks Related to Our Business, Technology and Industry If We Are Unable To Advance Our Product Candidates To Clinical Development, Obtain Regulatory Approval And Ultimately Commercialize Our Product Candidates, Or Experience Significant Delays In Doing So, Our Business Will Be Materially Harmed.~~ Our development efforts are ongoing and **we** have focused our research and development efforts to date on CRISPR / Cas9, gene editing technology, and our initial product candidates. Our future success depends heavily on the successful development of our CRISPR / Cas9 gene editing **next- generation** product candidates. We have invested substantially all of our efforts and financial resources in the identification and development of our current product candidates. Our ability to generate product revenue will depend heavily on the successful development and eventual commercialization of our product candidates, which may never occur. For example, **while we and our partner, Vertex, received the marketing approval of CASGEVY in 2023 in certain jurisdictions, and have received a subsequent approval in 2024, we cannot guarantee we and Vertex will receive additional marketing approvals for CASGEVY or we will receive marketing approvals for our other product candidates in the future, and** our research programs, including ~~those~~ **additional programs** subject to ~~our~~ **current and future** collaboration agreements with **third parties** ~~Vertex and ViaCyte and option agreement with Bayer~~ , may fail to identify

potential product candidates for clinical development for a number of reasons or may fail to successfully advance any product candidates through clinical development. Our potential product candidates, or our potential product candidates may be shown to have harmful side effects or may have other characteristics **or unforeseeable consequences** that may make the product candidates impractical to manufacture, unmarketable, or unlikely to receive marketing approval **, or that lead to product-related claims or litigation, including without limitation personal injury / product liability claims, adverse or serious adverse events, regulatory enforcement actions, or product recalls or market withdrawals** . We currently generate no revenue from sales of any product and we may never be able to **again research,** develop or commercialize a marketable product. We must file U. S. Investigational New Drug, or IND, applications, clinical trial applications, or CTAs, or their equivalents with regulatory authorities to commence clinical trials. The filing of CTAs or INDs for any product candidate is subject to the identification and selection of one or more guide RNAs with acceptable efficiency, among other activities. In addition, commencing any future clinical trial is also subject to acceptance by the European regulatory authorities, or its equivalent, of our CTAs, or the FDA of our INDs, and finalizing the trial design based on discussions with the applicable regulatory authorities. In the event that the European regulatory authorities, FDA or their equivalent ~~requires~~ **require** us to complete additional preclinical studies or we are required to satisfy other requests, our clinical trials may be delayed. Even after we receive and incorporate guidance from these regulatory authorities, they could disagree that we have satisfied their requirements to commence our clinical trial or change their position on the acceptability of our trial design or the clinical endpoints selected, which may require us to complete additional preclinical studies or clinical trials or impose stricter approval conditions than we currently expect **. In addition, there is no certainty that the FDA or other similar health regulatory agencies will continue to apply to all our CRISPR / Cas9 product candidates the same regulatory pathway and requirements it applied to CASGEVY, and is applying to other ex vivo engineered therapeutics and in vivo therapies** . To become and remain profitable, we must develop and commercialize product candidates with significant market potential, which will require us to be successful in a range of challenging activities. ~~Our~~ **In general, our** product candidates require preclinical and clinical development; regulatory and marketing approval in multiple jurisdictions; obtaining manufacturing supply, capacity, and expertise; building of a commercial organization; substantial investment and significant marketing efforts before we generate any revenue from product sales. In addition, our product development programs must be approved for marketing by the FDA, EMA or certain other health regulatory agencies, before we may commercialize our product candidates. We may never succeed in any or all of these activities and, even if we do, we may never generate revenues that are significant or large enough to achieve profitability. **Although we and our partner, Vertex, received the first- ever marketing approval of a CRISPR-based gene- editing therapy, CASGEVY, in 2023 in certain jurisdictions, and have received a subsequent approval in 2024, we cannot guarantee we and Vertex will receive additional marketing approvals for CASGEVY or we will receive marketing approvals for our other product candidates in the future, or that CASGEVY, or any other future product candidate we develop, will be profitable. For additional information, see also " Risk Factors — Risks Related to Our Relationships with Third Parties — We Have Partnered With Vertex On Our Lead Program CASGEVY; Vertex Has Significant Control Over The CASGEVY Program. "** If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease our value and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in our value also could cause shareholders to lose all or part of their investment. The success of our product candidates will depend on several factors, including the following: • successful completion of clinical trials and preclinical studies; • sufficiency of our financial and other resources to complete the necessary clinical trials and preclinical studies; • ability to develop safe and effective delivery mechanisms for our in vivo therapeutic programs; • ability to identify optimal RNA sequences to guide genomic editing; • maintenance of current, and entry into additional, collaborations to further the development of our product candidates; • approval of CTAs or INDs for our product candidates to commence clinical trials; • successful enrollment in, and completion of, clinical trials and preclinical studies; • successful data from our clinical program that support an acceptable risk- benefit profile of our product candidates for the intended patient populations; • receipt of regulatory and marketing approvals from applicable regulatory authorities; • establishing and maintaining arrangements with third- party manufacturers for clinical supply and commercial manufacturing and, where applicable, commercial manufacturing capabilities; • successful development of our internal manufacturing processes and transfer to larger- scale facilities operated by either a contract manufacturing organization or by us; • establishment and maintenance of patent and trade secret protection or regulatory exclusivity for our product candidates; • commercial launch of our product candidates, if and when approved, whether alone or in collaboration with others; • acceptance of the product candidates, if and when approved, by patients, the medical community and third- party payors; • effective competition with other therapies and treatment options; • establishment and maintenance of healthcare coverage and adequate reimbursement; • enforcement and defense of intellectual property rights and claims; • maintenance of a continued acceptable safety profile of the product candidates following approval; and • achieving desirable medicinal properties for the intended indications. Additionally, because our technology involves gene editing across multiple cell and tissue types, we are subject to many of the challenges and risks that gene therapies face, including: • regulatory requirements **and guidance** governing gene and cell therapy products have changed frequently and may continue to change in the future **, including, e. g., the final guidance document titled " Human Gene Therapy Products Incorporating Human Genome Editing " that the FDA issued in January 2024** ; **•** to date **, only** a limited number of products that involve the genetic modification of patient cells have been approved in the United States and the EU; • the administration processes or related procedures for our product candidates (e. g., treatment with myeloablative busulfan conditioning prior to receiving **CASGEVY** ~~exa- cel~~ or undergoing a lymphodepletion regimen prior to receiving our immunotherapy product candidates); • improper **modulation of a gene sequence, including unintended editing events,** insertion of a gene sequence into **certain locations in** a patient' s chromosome **or other effects related to the technology underlying our product candidates** could

lead to lymphoma, leukemia or other cancers, or other aberrantly functioning cells **, or other diseases, including death; • transient expression of the Cas9 protein or other genome editing components of our product candidates could lead to patients having an immunological reaction towards those cells, which could be severe or life- threatening; • corrective expression of a missing protein in patients' cells could result in the protein being recognized as foreign, and lead to a sustained immunological reaction against the expressed protein or expressing cells, which could be severe or life-threatening** ; and • the FDA recommends a follow- up observation period of **up to** 15 years ~~or longer~~ for all patients who receive treatment using gene therapies, and we may need to adopt and support, and have adopted and are supporting for certain of our trials, such an observation period for our product candidates. If we do not succeed in one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would materially harm our business. ~~If~~ **Ultimately, if** we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations **. In addition, if any product candidates encounter safety or efficacy problems, development delays, regulatory issues or other problems, our development plans and business could be significantly harmed. For the reasons described above, among others, regulatory authorities, particularly the FDA, have requested, and may request in the future, additional preclinical studies for genome editing products, such as additional studies related to toxicology, biodistribution or reproductive health, and / or preclinical studies earlier in clinical development compared to other therapeutic modalities. Although to date the FDA has cleared the INDs that we have submitted for certain of our clinical trials, including CTX112 and CTX131, it is possible that the FDA may impose requirements that result in a delay of any of our programs or their regulatory approval. If we are unable to complete any required studies satisfactorily, the FDA or other regulatory authorities could require that we exclude certain patient populations from clinical studies, place our clinical studies on hold, or require us to cease further clinical studies or deny approval of such product candidates. Further, competitors that are developing ex vivo or in vivo products with similar technology may experience problems with their product candidates or programs that could in turn cause us to identify problems with our product candidates and programs, or cause the FDA or other regulatory authorities to impose additional requirements, that could cause us to delay or pause development of our product candidates. Any of these occurrences may harm our ability to identify and develop product candidates, and may harm our business, financial condition, results of operations and prospects significantly. We cannot guarantee that the FDA or other regulatory authorities will not change their requirements in the future or approve amendments to our INDs or equivalent regulatory filings, including for CTX310 and CTX320 or our other product candidates on the timeline we expect** . Our CRISPR / Cas9 Gene Editing Product Candidates Are Based On A Relatively New Gene Editing Technology, Which Makes It Difficult To Predict The Time And Cost Of Development And Of Subsequently Obtaining Regulatory Approval, If At All. There Have Only Been A Limited Number Of Clinical Trials Of Product Candidates Based On Gene Editing Technology ~~And No~~ **. We aim to develop treatments and therapies for people suffering from serious diseases through transformative** ~~Gene~~ **gene - based medicines, including ex vivo engineered cell therapies and in vivo therapies. Although there have been significant advances in recent years in the fields of gene therapy and genome** ~~Editing~~ **editing , including** ~~Products Have Been Approved In The United States Or In The EU.~~ CRISPR / Cas9 gene editing technology ~~is~~ **, such technologies, including in vivo CRISPR- based genome editing technologies in particular, are** relatively new ~~, and no products based on CRISPR / Cas9 or other similar gene editing technologies have been approved in the United States or the EU~~ and only a limited number of clinical trials of product candidates based on **such** gene editing technologies have been commenced **and their therapeutic utility is largely unproven** . As such it is difficult to accurately predict the developmental challenges we may incur for our product candidates as they proceed through product discovery or identification, preclinical studies and clinical trials. For example, ~~because~~ **no genome editing in vivo therapy has been approved by the FDA or other regulatory authorities. While** we **and our partner, Vertex, received the first- ever approval for an ex- vivo CRISPR- based gene- editing therapy, CASGEVY, in 2023 in certain jurisdictions, and** have **received a subsequent approval** ~~only limited data from clinical trials~~ in **2024** ~~exa- cel~~ , ~~CTX110 and CTX130,~~ we ~~have not yet been able to fully assess safety~~ **and Vertex cannot guarantee we will receive additional marketing approvals for CASGEVY or that we will receive marketing approvals for our other product candidates** in ~~humans~~ **the future** . In addition, because we have only recently commenced clinical trials for certain of our other product candidates, we have not yet been able to **fully** assess safety in humans. There may be long- term effects from treatment with any product candidates that we develop that we cannot predict at this time. Any product candidates we may develop will act at the level of DNA, and, because animal DNA differs from human DNA, testing of our product candidates in animal models may not be predictive of the results we observe in human clinical trials of our product candidates for either safety or efficacy. Also, animal models may not exist for some of the diseases we choose to pursue in our programs. As a result of these factors, it is more difficult for us to predict the time and cost of product candidate development, and we cannot predict whether the application of our gene editing technology, or any similar or competitive gene editing technologies, will result in the identification, development, and regulatory approval of any products. There can be no assurance that any development problems we experience in the future related to our gene editing technology or any of our research and development programs will not cause significant delays or unanticipated costs, or that such development problems can be solved. Any of these factors may prevent us from completing our preclinical studies or any clinical trials that we may initiate or commercializing any product candidates we may develop on a timely or profitable basis, if at all. The clinical trial requirements of the FDA, the EMA and other regulatory authorities and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use and market of the product candidate. ~~No products based on gene editing technologies~~ **Although we and our partner, Vertex, received the marketing approval of CASGEVY in 2023 in certain jurisdictions, and** have ~~been~~ **received a subsequent** ~~approved~~ **approval in 2024** ~~by regulators. As a result~~ , **we cannot guarantee we and Vertex will receive additional marketing approvals for CASGEVY or we will receive**

marketing approvals for our other product candidates in the future, and the regulatory approval process for product candidates such as ours ~~is~~ **remains** uncertain and may be more expensive and take longer than the approval process for product candidates based on other, better known or more extensively studied technologies. It is difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our **future** product candidates in either the United States or the EU or how long it will take to commercialize our product candidates. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product candidate to market could decrease our ability to generate sufficient product revenue, and our business, financial condition, results of operations and prospects may be harmed. Our Engineered Allogeneic T cell Product Candidates Represent A Novel Approach To Cancer Treatment That Creates Significant Challenges For Us. For our immuno- oncology programs, we are developing a pipeline of allogeneic T cell product candidates (including, for example, ~~CTX110,~~ CTX112 ~~, CTX130~~ and CTX131) that are engineered from healthy donor T cells to express chimeric antigen receptors, or CARs, and are intended for use in any patient with certain cancers. Unlike for autologous CAR T therapies, for allogeneic CAR T therapies, we are reliant on receiving healthy donor material to manufacture our product candidates. Healthy donor T cells vary in type and quality, and this variation makes producing standardized allogeneic CAR T product candidates challenging and makes the development and commercialization pathway of those product candidates uncertain. We have developed screening processes designed to enhance the quality and consistency of T cells used in the manufacture of our CAR T cell product candidates, but our screening processes may fail to identify suitable donor material and we may discover failures with the material after production. We may also have to update our specifications for new risks that may emerge, such as to screen for new viruses. We have strict specifications for donor material, which include specifications required by regulatory authorities. If we are unable to identify and obtain donor material that satisfy specifications, agree with regulatory authorities on appropriate specifications, or address variability in donor T cells, there may be inconsistencies in the product candidates we produce or we may be unable to initiate or continue ongoing clinical trials on the timelines we expect, which could harm our reputation and adversely impact our business and prospects. In addition, approved autologous CAR T therapies and those under development have shown frequent rates of cytokine release syndrome, neurotoxicity, serious infections, prolonged cytopenia and hypogammaglobulinemia, and other serious adverse events that have resulted in patient deaths. We expect similar adverse events for our allogeneic CAR T product candidates. Moreover, patients eligible for allogeneic CAR T cell therapies but ineligible for autologous CAR T cell therapies due to aggressive cancer and inability to wait for autologous CAR T cell therapies may be at greater risk for complications and death from therapy. Our allogeneic CAR T cell product candidates may also cause unique adverse events related to the differences between the donor and patients, such as Graft versus Host Disease, or GvHD, or infusion reactions. GvHD results when allogeneic T cells start recognizing the patient' s normal tissue as foreign. We have designed our CRISPR / Cas9 gene editing technology to eliminate the T- cell receptor from the healthy donor T cells to reduce the risk of GvHD from our product candidates, as well as to remove the class I major histocompatibility complex from the cell surface in order to limit the patient' s immune system from attacking the allogeneic T cells and to improve the persistence of the CAR T cells. However, the gene editing of our product candidates may not be successful in limiting the risk of GvHD or premature rejection by the patient. In addition, results of our immuno-oncology clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. If significant GvHD or other adverse events are observed with the administration of our product candidates, or if any of the product candidates is viewed as less safe or effective than autologous therapies or other allogenic therapies, our ability to develop allogeneic therapies may be adversely affected **. Further, in November 2023, the FDA announced that it would be conducting an investigation into reports of T- cell malignancies following BCMA- directed or CD19- directed autologous chimeric antigen receptor, or CAR T cell immunotherapies following reports of T cell lymphoma in patients receiving these therapies. In January 2024, the FDA determined that new safety information related to T cell malignancies should be included in the labeling with boxed warning language on these malignancies for all BCMA- and CD19- directed genetically modified autologous T cell immunotherapies. FDA' s investigation into CAR T therapies and other similar actions could result in increased government regulation, unfavorable public perception and publicity, and, although we are developing allogeneic CAR T candidates, the FDA' s investigation could result in potential impacts on enrollment in our clinical trials, potential regulatory delays in the testing or approval of our product candidates, stricter labeling requirements for those product candidates that are approved, and a decrease in demand for any such product candidates** . The FDA, The NIH And The EMA Have Demonstrated Caution In Their Regulation Of Gene Therapy Treatments, And Ethical And Legal Concerns About Gene Therapy And Genetic Testing May Result In Additional Regulations Or Restrictions On The Development And Commercialization Of Our Product Candidates, Which May Be Difficult To Predict. The FDA, NIH and the EMA have each expressed interest in further regulating biotechnology, including gene therapy and genetic testing. For example, the EMA advocates a risk- based approach to the development of a gene therapy product. Agencies at both the federal and state level in the United States, as well as the U. S. congressional committees and other governments or governing agencies, have also expressed interest in further regulating the biotechnology industry. Such action may delay or prevent commercialization of some or all of our product candidates. Regulatory requirements in the United States and in other jurisdictions governing gene therapy products have changed frequently and may continue to change in the future. The FDA has issued several guidance documents on gene therapy products. The FDA established the Office of Therapeutic Products within its Center for Biologics Evaluation and Research to consolidate the review of gene therapy and related products, and established the Cellular, Tissue and Gene Therapies Advisory Committee to advise this review. In addition to the government regulators, the IBC and IRB of each institution at which we conduct clinical trials of our product candidates, or a central IRB if appropriate, would need to review the proposed clinical trial to assess the safety of the trial. In addition, adverse developments in clinical trials of gene therapy product candidates conducted by others may cause the FDA or other oversight ~~bodies~~ **authorities** to change the requirements for approval of any of our product candidates. Similarly, the EMA governs the development of gene

therapies in the EU and may issue new guidelines concerning the development and marketing authorization for gene therapy products and require that we comply with these new guidelines. These regulatory review agencies and committees and the new requirements or guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies or trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post- approval limitations or restrictions. As we advance our product candidates and seek regulatory approval, we will be required to consult with these regulatory agencies and committees and comply with applicable requirements and guidelines. If we fail to do so, we may be required to delay or discontinue development of such product candidates. These additional processes may result in a review and approval process that is longer than we otherwise would have expected. Delays as a result of an increased or lengthier regulatory approval process or further restrictions on the development of our product candidates can be costly and could negatively impact our or our collaborators' ability to complete clinical trials and commercialize our current and future product candidates in a timely manner, if at all. If Any Of The Product Candidates We May Develop Or Administration Processes We Rely On ~~Causes~~ **Cause** Undesirable Side Effects, It Could Delay Or Prevent Their Regulatory Approval, Limit The Commercial Potential Or Result In Significant Negative Consequences Following Any Potential Marketing Approval. Product candidates we may develop may be associated with undesirable or unacceptable side effects, unexpected characteristics or other serious adverse events, including death or off- target cuts of DNA, or the introduction of cuts in DNA at locations other than the target sequence. These off- target cuts could lead to disruption of a gene or a genetic regulatory sequence at an unintended site in the DNA, or, in those instances where we also provide a segment of DNA to serve as a repair template, it is possible that following off- target cut events, DNA from such repair template could be integrated into the genome at an unintended site, potentially disrupting another important gene or genomic element. There also is the potential risk of delayed adverse events following exposure to gene editing therapy due to persistent biologic activity of the genetic material or other components of products used to carry the genetic material. Possible adverse side effects that could occur with treatment with gene editing products include an immunologic reaction after administration which could substantially limit the effectiveness of the treatment. Immunotherapy, and its method of action of harnessing the body' s immune system, is powerful and could lead to serious side effects that we only discover in clinical trials. Unforeseen side effects could arise either during clinical development or, if such side effects are rare, after our product candidates have been approved by regulatory authorities and the approved product has been marketed, resulting in the exposure of additional patients. If our CRISPR / Cas9 gene editing technology demonstrates a similar effect, we may decide or be required to halt or delay preclinical development ~~or~~ **,** clinical development **or commercialization** of our product candidates. In addition to serious adverse events or side effects caused by any product candidate we may develop, the administration process or related procedures also can cause undesirable side effects. **For example,** ~~Patients~~ **patients** who **receive CASGEVY or** enroll in **the ongoing CASGEVY** ~~our exa- cel~~ clinical trials have their own CRISPR / Cas9 edited- hematopoietic stem and progenitor cells, **CASGEVY** ~~exa- cel~~, infused back into the patient as part of a stem cell transplant, a process which involves, among other things, a patient being treated with myeloablative busulfan conditioning. Patients undergoing stem cell transplants may also encounter side effects (ranging from mild to severe) that are unrelated to the administration of ~~exa- cel~~ **a product candidate** . Patients who enroll in our immunotherapy trials undergo a lymphodepletion regimen, which generally includes fludarabine and cyclophosphamide that may cause serious adverse events. Because these regimens will cause a transient and sometimes prolonged immune suppression, patients will have an increased risk of certain infections that may be unable to be cleared by the patient and could ultimately lead to death. Any side effects may not be appropriately recognized or managed by the treating medical staff. We or our collaborators expect to have to educate medical personnel using any product candidates we may develop to understand the side effect profiles for our clinical trials and upon any commercialization of such product candidates. Inadequate recognition or management of the potential side effects of such product candidates could result in patient injury or death. If any undesirable or unacceptable side effects, unexpected characteristics or other serious adverse events occur, our clinical trials or commercial distribution of any product candidates or products we develop alone or with collaborators could be suspended or terminated, and our business and reputation could suffer substantial harm. If in the future we are unable to demonstrate that such adverse events were caused by factors other than our product candidate **or approved products** , the FDA, EMA or other comparable health regulatory authorities could order us to cease further clinical studies of, or deny approval of, any product candidates we are able to develop for any or all targeted indications **or cease the sale of approved products** . Even if we are able to demonstrate that all future serious adverse events are not product- related, such occurrences could affect patient recruitment or the ability of enrolled patients to complete the trial. Moreover, if we elect, or are required, to delay, suspend or terminate any clinical trial of any product candidate, the commercial prospects of such product candidates may be harmed and our ability to generate product revenues from any of these product candidates may be delayed or eliminated. Any of these occurrences may harm our ability to identify and develop product candidates, and may harm our business, financial condition, result of operations and prospects significantly. Additionally, if we successfully develop a product candidate and it receives marketing approval, the FDA could require us to adopt a Risk Evaluation and Mitigation Strategy, or REMS, to ensure that the benefits of treatment with such product candidate outweighs the risks for each potential patient, which may include, among other things, a medication guide outlining the risks of the product for distribution to patients, a communication plan to health care practitioners, extensive patient monitoring, or distribution systems and processes that are highly controlled, restrictive, and more costly than what is typical for the industry. Furthermore, if we or others later identify undesirable side effects caused by any product candidate that we develop **alone or with our collaborators** , several potentially significant negative consequences could result, including: • regulatory authorities may revoke licenses or suspend, vary or withdraw approvals of such product candidate; • regulatory authorities may require additional warnings on the label; • we may be required to change the way a product candidate is administered or conduct additional clinical trials; • we could be sued and held liable for harm caused to patients; and • our reputation may suffer. Moreover, gene therapy product candidates investigated by other parties have resulted

in serious adverse events, including deaths, and it is possible that the FDA or other regulatory authorities could impose a clinical hold on clinical trials of our product candidates after becoming aware of adverse events with products or product candidates in the same class as our product candidates. Any of these events could prevent us from achieving or maintaining market acceptance of our gene editing technology and any product candidates we may identify and develop and could have a material adverse effect on our business, financial condition, results of operations and prospects. If We Experience Delays Or Difficulties In The Enrollment Of Patients In Clinical Trials, Our Receipt Of Necessary Regulatory Approvals Could Be Delayed Or Prevented. We or our collaborators may not be able to initiate or continue clinical trials for any product candidates we identify or develop if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or analogous regulatory authorities outside the United States, or as needed to provide appropriate statistical power for a given trial. Enrollment may be particularly challenging for any rare genetically defined diseases we may target in the future. In addition, if patients are unwilling to participate in our gene editing trials because of negative publicity from adverse events related to the biotechnology, gene therapy or gene editing fields, competitive clinical trials for similar patient populations, clinical trials with competing products, or for other reasons, the timeline for recruiting patients, conducting studies and obtaining regulatory approval of any product candidates we may develop may be delayed. Moreover, some of our competitors may have ongoing clinical trials for product candidates that would treat the same indications as any product candidates we may develop, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. Patient enrollment is also affected by other factors, including: • severity of the disease under investigation; • size of the patient population and process for identifying subjects; • design of the trial protocol; • availability of eligible prospective patients that are otherwise eligible patients for competitive clinical trials; • availability and efficacy of approved medications for the disease under investigation; • availability of genetic testing for potential patients; • ability to obtain and maintain subject consent; • risk that enrolled subjects will drop out before completion of the trial; • eligibility and exclusion criteria for the trial in question; • perceived risks and benefits of the product candidate under trial; • perceived risks and benefits of gene editing and cellular therapies as therapeutic approaches; • efforts to facilitate timely enrollment in clinical trials; • patient referral practices of physicians; • ability to monitor patients adequately during and after treatment; **and** • proximity and availability of clinical trial sites for prospective patients ~~; and • the ongoing coronavirus pandemic~~ . Enrollment delays in our clinical trials may result in increased development costs for any product candidates we may develop, which would cause our value to decline and limit our ability to obtain additional financing. If we or our collaborators have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit, or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business, financial condition, results of operations, and prospects . Our Business May Be Adversely Affected....., patients and communities a top priority . Positive Results From Early Preclinical Studies Or Preliminary Results from Clinical Trials Of Our Product Candidates Are Not Necessarily Predictive Of The Results Of Later Preclinical Studies And Any Future Clinical Trials Of Our Product Candidates. If We Cannot Replicate The Positive Results From Our Earlier Preclinical Studies Of Our Product Candidates In Our Later Preclinical Studies, Clinical Trials And Future Clinical Trials, We May Be Unable To Successfully Develop, Obtain Regulatory Approval For And Commercialize Our Product Candidates. Any positive results from our preclinical studies or preliminary results from our clinical trials of our product candidates may not necessarily be predictive of the results from required later preclinical studies and clinical trials. Preliminary, interim and top- line data from clinical trials may change as more patient data become available. Preliminary, interim or top- line data from clinical trials are not necessarily predictive of final results, including the results submitted in support of approval in a BLA or equivalent submission outside the United States. Interim, top- line and preliminary data remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously announced. As a result, preliminary, interim and top- line data should be viewed with caution until the final data are available. Material adverse changes in the final data compared to the interim data could significantly harm our business prospects. Moreover, preliminary, interim and top- line data are subject to the risk that one or more of the clinical outcomes may materially change as more patient data become available when patients mature on study, patient enrollment continues or as other ongoing or future clinical trials with a product candidate further develop. For example, consistent with the FDA' s recommendation, certain of our clinical trials include a 15 year follow- up observation period in which we will continue to collect patient data. The information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically more extensive information, and you or others may not agree with what we determine is material or otherwise appropriate information to include in our disclosure. Any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular product candidate or our business. Similarly, even if we are able to complete our planned preclinical studies or any future clinical trials of our product candidates according to our current development timeline, the positive results from such preclinical studies and clinical trials of our product candidates may not be replicated in subsequent preclinical studies or clinical trial results. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late- stage clinical trials after achieving positive results in early- stage development and we cannot be certain that we will not face similar setbacks. Similarly, many companies in the pharmaceutical and biotechnology industries have failed to receive regulatory approval despite completing registration trials. These setbacks have been caused by, among other things, preclinical and other nonclinical findings made while clinical trials were underway or safety or efficacy observations made in preclinical studies and clinical trials, including previously unreported adverse events. Moreover, preclinical, nonclinical and clinical data are often susceptible to varying interpretations and analyses and many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials nonetheless failed to obtain FDA or EMA approval. Even If We Complete The Necessary Preclinical Studies And Clinical Trials, The Marketing Approval Process Is Expensive, Time- Consuming, And Uncertain And May Prevent Us From Obtaining Approvals For The Commercialization Of Any Product Candidates We May Develop. If We Are

Not Able To Obtain, Or If There Are Delays In Obtaining, Required Regulatory Approvals, We Will Not Be Able To Commercialize, Or Will Be Delayed In Commercializing, Product Candidates We May Develop, And Our Ability To Generate Revenue Will Be Materially Impaired. Any product candidates we may develop and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale, and distribution, are subject to comprehensive regulation by the FDA and other regulatory authorities in the United States, by EMA in the EU and by comparable authorities in other countries. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate in a given jurisdiction. While **CASGEVY has received approval or clearance to be marketed from certain regulatory authorities in certain jurisdictions, it is possible that none of our other product candidates or any product candidates we may seek to develop, alone or in conjunction with collaborators, in the future will ever obtain regulatory approval or clearance or that we and Vertex will receive additional marketing approvals for CASGEVY. For example, while** we have multiple product candidates in clinical development and advanced preclinical development for a range of diseases, we have not yet submitted BLAs for any of our wholly- owned allogeneic CAR T product candidates to the FDA, or similar marketing applications to comparable foreign authorities. ~~In the fourth quarter of 2022, we and Vertex completed regulatory submissions for exa- cel with the EMA and MHRA in the EU and the UK, respectively, for the potential treatment of SCD and TDT, and both the EMA and the MHRA have validated the respective Marketing Authorization Applications. In addition, we and Vertex initiated the BLA rolling submission to the FDA in November 2022, which we and Vertex expect to be complete by the end of the first quarter of 2023. However, we have not received approval or clearance to market any product candidates from regulatory authorities in any jurisdiction and it is possible that none of our product candidates or any product candidates we may seek to develop, alone or in conjunction with collaborators, in the future will ever obtain regulatory approval or clearance.~~ We have limited experience in submitting and supporting the applications necessary to gain regulatory and marketing approvals. We expect to rely on third-party **contract research organizations, or** CROs **,** and / or regulatory consultants to assist us in this process for our wholly-owned product candidates and, pursuant to our **Amended** A & R Vertex JDCA, we have relied on Vertex for submitting such applications for our hemoglobinopathies product candidates. Submission of a BLA or other similar marketing applications to comparable foreign authorities and securing regulatory approval requires the submission of extensive preclinical and clinical data and supporting information to the various regulatory authorities for each therapeutic indication to establish the biologic product candidate' s safety, purity, efficacy and potency, also known as safety and effectiveness, for each desired therapeutic indication. A BLA must also include significant information regarding the chemistry, manufacturing and controls for the product candidate. Securing regulatory approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the relevant regulatory authority. ~~Should the FDA determine that an inspection is necessary for approval of a marketing application and an inspection cannot be completed during the review cycle due to restrictions on travel as a result of the coronavirus pandemic, the FDA has stated that it generally intends to issue a complete response letter or defer action on the application until an inspection can be completed.~~ In general, the FDA requires the successful completion of two pivotal trials to support approval of a BLA, but in certain circumstances, will approve a BLA based on only one pivotal trial; and our ability to submit and obtain approval of a BLA is ultimately an FDA review decision, which will be dependent upon the data available at such time, and the available data may not be sufficiently robust from a safety and / or efficacy perspective to support the submission or approval of a BLA. For example, there is no assurance that data obtained at the completion of any of our clinical trials, including for our ongoing wholly- owned product candidates, including ~~CTX110~~ **CTX112** and ~~CTX130~~ **CTX131** , will indicate clinically meaningful benefit or support submission of a BLA, or will be sufficiently robust from a safety and / or efficacy perspective to support either accelerated or conditional approval or full approval. Moreover, there is no assurance that the data obtained to date in the ongoing ~~CLIMB- 111 and CLIMB- 121~~ clinical trials of **CASGEVY** ~~exa- cel~~ and being submitted **or planned** to **be submitted is or** ~~the FDA on a rolling basis~~ will be sufficiently robust from a safety and / or efficacy perspective to support either accelerated or conditional approval or full approval of a BLA **or a foreign equivalent in all jurisdictions for which regulatory applications are submitted** . Depending on the outcome of these ongoing clinical trials, and robustness of the data submitted, once submitted, the FDA may require that we conduct additional or larger pivotal trials before we can submit or obtain approval of a BLA. Furthermore, if any undesirable or unacceptable side effects, unexpected characteristics or other serious adverse events occur, and if we are unable to demonstrate such adverse events were caused by factors other than our product candidate, the FDA, EMA or other comparable health regulatory authorities could suspend our clinical trial until we are able to gather sufficient information or order us to cease further clinical studies of our product candidate. If this were to occur this would likely result in delays in our ability to submit a BLA for regulatory approval. We may face similar challenges with foreign regulatory ~~bodies~~ **authorities** . Furthermore, failure of one or more clinical trials can occur at any stage in the clinical trial process. Any product candidates we develop may not be effective, may be only moderately effective, or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use. Accordingly, the regulatory pathway for our product candidates is still uncertain, complex, and lengthy, and ultimately, approval may not be obtained. Even if our product candidates demonstrate safety and efficacy in clinical studies, regulatory delays or rejections may be encountered as a result of many factors, including changes in regulatory policy during the period of product development. The process of obtaining marketing approvals, both in the United States and in other foreign jurisdictions, is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. The FDA and comparable authorities in other countries have substantial discretion in the approval process and may

refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit, or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post- approval commitments that render the approved product not commercially viable. If we experience delays in obtaining approval or if we fail to obtain approval of any product candidates we may develop, the commercial prospects for those product candidates may be harmed, and our ability to generate revenues will be materially impaired. We May Never Obtain FDA Approval For Any Of Our **Wholly- Owned** Product Candidates In The United States, And Even If We Do, We May Never Obtain Approval For Or Commercialize Any Of Our **Wholly- Owned** Product Candidates In Any Other Jurisdiction, Which Would Limit Our Ability To Realize Their Full Market Potential. In order to eventually market any of our product candidates in any particular jurisdiction, we must establish and comply with numerous and varying regulatory requirements on a jurisdiction- by- jurisdiction basis regarding safety and efficacy. Approval by the FDA in the United States, if obtained, does not ensure approval by regulatory authorities in other countries or jurisdictions. Similarly, approval by foreign regulatory authorities does not ensure approval by the FDA. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country. Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking regulatory approval in multiple jurisdictions could result in difficulties and costs for us and require additional preclinical studies or clinical trials which could be costly and time- consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in certain countries. Regulatory approval processes outside the United States involve all of the risks associated with FDA approval. We do not have any **wholly- owned** product candidates approved for sale in any jurisdiction, including international markets, and, as a company, do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, or if regulatory approvals in international markets are delayed, our target market will be reduced and our ability to realize the full market potential of our products will be unrealized. Breakthrough Therapy Designation, Fast Track Designation, Regenerative Medicine Advanced Therapy Designation or Priority Review by the FDA, or PRIME Scheme by the EMA, Even If Granted for Any of Our Product Candidates, May Not Lead to a Faster Development, Regulatory Review or Approval Process, and It May Not Increase the Likelihood That Any of Our Product Candidates Will Receive Marking Approval. We may seek a Breakthrough Therapy Designation for some of our product candidates ~~. A breakthrough therapy is defined as a therapy that is intended, alone or in combination with one or more other therapies, to treat a serious or life- threatening disease or condition, and preliminary clinical evidence indicates that the therapy may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For therapies that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Therapies designated as breakthrough therapies by the FDA may also be eligible for priority review and accelerated approval~~. Designation as a breakthrough therapy is within the discretion of the FDA. Accordingly, even if we believe one of our product candidates meets the criteria for designation as a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a Breakthrough Therapy Designation for a product candidate may not result in a faster development process, review or approval compared to therapies considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify as breakthrough therapies, the FDA may later decide that such product candidates no longer meet the conditions for qualification or decide that the time period for FDA review or approval will not be shortened. We have obtained and may seek Fast Track Designation for some of our product candidates. For instance, **CASGEVY was** ~~exa- cel has been~~ granted Fast Track Designation by the FDA for the treatment of TDT and SCD ~~. If a therapy is intended for the treatment of a serious or life- threatening condition and the therapy demonstrates the potential to address unmet medical needs for this condition, the therapy sponsor may apply for Fast Track Designation~~. The FDA has broad discretion whether or not to grant this designation, so even if we believe a particular product candidate is eligible for this designation; we cannot assure you that the FDA would decide to grant it. Even if we do receive Fast Track Designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. For Fast Track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a Fast Track product' s marketing application before the application is complete ~~. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a Fast Track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees~~. However, the FDA' s time period goal for reviewing an application does not begin until the last section of the application is submitted. The FDA may withdraw Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program. Fast Track Designation alone does not guarantee qualification for the FDA' s priority review procedures. We have obtained and may seek RMAT designation for some of our product candidates. For instance, **CASGEVY was** ~~exa- cel has been~~ granted RMAT designation by the FDA for the treatment of TDT and SCD ~~, as well as CTX110 for the treatment of relapsed or refractory B- cell lymphoma and CTX130 for the treatment of Mycosis Fungoides and Sézary Syndrome (MF / SS). In 2017, the FDA established the RMAT designation as part of its implementation of the 21st Century Cures Act to expedite review of any drug that meets the following criteria: it qualifies as a RMAT, which is defined as a cell therapy, therapeutic tissue engineering product, human cell and tissue product, or any combination product using such therapies or products, with limited exceptions; it is intended to treat, modify, reverse, or cure a serious or life- threatening disease or condition; and preliminary clinical evidence indicates that the drug has the potential to~~

address unmet medical needs for such a disease or condition. Like Breakthrough Therapy Designation, RMAT designation provides potential benefits that include more frequent meetings with FDA to discuss the development plan for the product candidate, and eligibility for rolling review and priority review . Products granted RMAT designation may also be eligible for accelerated approval on the basis of a surrogate or intermediate endpoint reasonably likely to predict long- term clinical benefit, or reliance upon data obtained from a meaningful number of sites, including through expansion to additional sites. There can be no assurance that the FDA would allow any of the product candidates we may develop to proceed on an accelerated approval pathway, and even if the FDA did allow such pathway, there can be no assurance that such submission or application will be accepted or that any expedited development, review or approval will be granted on a timely basis, or at all. RMAT- designated products that receive accelerated approval may, as appropriate, fulfill their post- approval requirements through the submission of clinical evidence, clinical trials, patient registries, or other sources of real world evidence, such as electronic health records; through the collection of larger confirmatory data sets; or via post- approval monitoring of all patients treated with such therapy prior to approval of the therapy. There is no assurance that we will be able to obtain RMAT designation for other of our product candidates. RMAT designation does not change the FDA' s standards for product approval, and there is no assurance that such designation will result in expedited review or approval or that the approved indication will not be narrower than the indication covered by the designation. Additionally, RMAT designation can be revoked if the criteria for eligibility cease to be met as clinical data emerges. Further, even if we received accelerated approval, any post- approval studies required to confirm and verify clinical benefit may not show such benefit, which could lead to withdrawal of any approvals we have obtained. Receiving accelerated approval does not assure that the product' s accelerated approval will eventually be converted to a traditional approval. Moreover, under **the Food and Drug Omnibus Reform Act of 2022, or** FDORA, the FDA is permitted to require, as appropriate, that a post- approval confirmatory study or studies be underway prior to approval or within a specified time period after the date of approval for a product granted accelerated approval. FDORA also requires sponsors to send updates to the FDA every 180 days on the status of such studies, including progress toward enrollment targets, and the FDA must promptly post this information publicly. FDORA also gives the FDA increased authority to withdraw approval of a drug or biologic granted accelerated approval on an expedited basis if the sponsor fails to conduct such studies in a timely manner, send the necessary updates to the FDA, or if such post- approval studies fail to verify the drug' s predicted clinical benefit. Under FDORA, the FDA is empowered to take action, such as issuing fines, against companies that fail to conduct with due diligence any post-approval confirmatory study or submit timely reports to the agency on their progress. If the FDA determines that a product candidate offers a treatment for a serious condition and, if approved, the product would provide a significant improvement in safety or effectiveness, the FDA may designate the product candidate for priority review. A priority review designation means that the goal for the FDA to review an application is six months, rather than the standard review period of ten months. The FDA has broad discretion with respect to whether or not to grant priority review status to a product candidate, so even if we believe a particular product candidate is eligible for such designation or status, the FDA may decide not to grant it. Moreover, a priority review designation does not necessarily result in expedited regulatory review or approval process or necessarily confer any advantage with respect to approval compared to conventional FDA procedures. Receiving priority review from the FDA does not guarantee approval within the six- month review cycle or at all. Finally, we have obtained and may seek to qualify our product candidates under the PRIME scheme from the EMA. For instance, **CASGEVY was** exa- cel has been granted PRIME designation for the treatment of TDT and SCD . The PRIME scheme is open to medicines under development and for which the applicant intends to apply for an initial MAA through the centralized procedure. Eligible products must target conditions for which where is an unmet medical need (there is no satisfactory method of diagnosis, prevention or treatment in the EU or, if there is, the new medicine will bring a major therapeutic advantage) and they must demonstrate the potential to address the unmet medical need by introducing new methods or therapy or improving existing ones . There is no assurance that we will be able to obtain PRIME qualification for other of our product candidates. PRIME does not change the standards for product approval, and there is no assurance that such qualification will result in expedited review or approval. Moreover, where, during the course of development, a medicine no longer meets the eligibility criteria, support under the PRIME scheme may be withdrawn. **For additional information regarding Breakthrough Therapy Designation, Fast Track Designation, RMAT Designation and priority review by the FDA, see the section entitled, " Business — Government Regulation — Licensure and Regulation of Biologics in the United States – Expedited Programs. " For additional information regarding the PRIME scheme from the EMA, see the section entitled " Business — Government Regulation — Regulation And Procedures Governing Approval Of Medicinal Products In Europe – PRIME scheme. "** We May Seek Designation For Our Platform Technology As A Designated Platform Technology, But We Might Not Receive Such Designation, And Even If We Do, Such Designation May Not Lead To A Faster Regulatory Review Or Approval Process. We may seek designation for our platform technology as a designated platform technology. Under the Food and Drug Omnibus Reform Act of 2022 (" FDORA ") , a platform technology incorporated within or utilized by a drug or biological product is eligible for designation as a designated platform technology if (1) the platform technology is incorporated in, or utilized by, a drug approved under a BLA; (2) preliminary evidence submitted by the sponsor of the approved or licensed drug, or a sponsor that has been granted a right of reference to data submitted in the application for such drug, demonstrates that the platform technology has the potential to be incorporated in, or utilized by, more than one drug without an adverse effect on quality, manufacturing, or safety; and (3) data or information submitted by the applicable person indicates that incorporation or utilization of the platform technology has a reasonable likelihood to bring significant efficiencies to the drug development or manufacturing process and to the review process. A sponsor may request the FDA to designate a platform technology as a designated platform technology concurrently with, or at any time after, submission of an IND application for a drug that incorporates or utilizes the platform technology that is the subject of the request. If so designated, the FDA may expedite the development and review of any subsequent original BLA for a drug that uses or incorporates the platform technology. Even if we believe our platform technology meets the criteria

for such designation, the FDA may disagree and instead determine not to grant such designation. In addition, the receipt of such designation for a platform technology does not ensure that a drug will be developed more quickly or receive FDA approval. Moreover, the FDA may revoke a designation if the FDA determines that a designated platform technology no longer meets the criteria for such designation. We May Be Unable To Obtain Orphan Drug Designation Or Exclusivity. If Our Competitors Are Able To Obtain Orphan Drug Exclusivity For Products That Constitute The Same Drug And Treat The Same Indications As Our Product Candidates, We May Not Be Able To Have Competing Products Approved By The Applicable Regulatory Authority For A Significant Period Of Time. We have received orphan drug designation in the United States from the FDA for certain of our programs ~~, including for CTX130 for the treatment of T- cell lymphomas. We also have received orphan drug designation from the FDA~~ and the European Commission for ~~exa- cel~~ **certain of our programs or partnered programs, including for CASGEVY** for the treatment of TDT and SCD. We may in the future seek orphan drug designation for certain of our other product candidates, but we may be unable to maintain orphan drug designation or obtain any benefits associated with orphan drug designation, including market exclusivity. ~~Regulatory authorities in some jurisdictions, including the United States and the European Union, may designate drugs and biologics intended to treat relatively small patient populations as orphan drugs. Under the Orphan Drug Act of 1983, FDA may designate a product candidate as an orphan drug if it is intended to treat a rare disease or condition, which is defined as a disease or condition having a patient population of fewer than 200, 000 individuals in the United States, or a patient population greater than 200, 000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the European Union, the European Commission after recommendation from the EMA' s Committee for Orphan Medicinal Products grants orphan drug designation to promote the development of products that are intended for the diagnosis, prevention or treatment of a life- threatening or chronically debilitating condition affecting not more than 5 in 10, 000 persons in the European Union. Additionally, orphan designation is granted for products intended for the diagnosis, prevention or treatment of a life- threatening, seriously debilitating or serious and chronic condition and when, without incentives, it is unlikely that sales of the drug in the European Union would be sufficient to justify the necessary investment in developing the drug or biologic product. An orphan drug designation provides a number of benefits, including fee reductions, regulatory assistance, and in the European Union the ability to apply for a centralized EU marketing authorization.~~ Certain of our current product candidates and our future product candidates may target patient populations that are smaller than the numbers ~~described above~~ **required for orphan drug designation** . If we request orphan drug designation for our product candidates, there can be no assurances that FDA or the European Commission will grant any of our product candidates such designation. Additionally, the designation of any of our product candidates as an orphan product does not guarantee that any regulatory agency will accelerate regulatory review of, or ultimately approve, that product candidate, nor does it limit the ability of any regulatory agency to grant orphan ~~drug~~ designation to product candidates of other companies that treat the same indications as our product candidates prior to our product candidates receiving exclusive marketing approval. Generally, if a product candidate with an orphan drug designation receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the European Commission from approving another marketing application for a product that constitutes the same drug treating the same indication for that marketing exclusivity period, except in limited circumstances. If another sponsor receives such approval before we do (regardless of our orphan drug designation), we will be precluded from receiving marketing approval for our product for the applicable exclusivity period. The applicable period is seven years in the United States and 10 years in the European Union. The exclusivity period in the United States can be extended by six months if the sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The exclusivity period in the European Union can be **extended by two years for medicines that have complied with an agreed pediatric investigation plan prior to authorization of the product. The exclusivity period in the European Union can also be** reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan ~~drug~~ designation, because, for example, the product is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be revoked if any regulatory agency determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of patients with the rare disease or condition. Even if we obtain orphan drug exclusivity for a product candidate, that exclusivity may not effectively protect the product candidate from competition because different drugs can be approved for the same condition. In the United States, even after an orphan drug is approved, the FDA may subsequently approve another drug for the same condition if the FDA concludes that the latter drug is not the same drug, including if it is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. In the European Union, marketing authorization may be granted to a similar medicinal product for the same orphan indication if: • the second applicant can establish in its application that its medicinal product, although similar to the orphan medicinal product already authorized, is safer, more effective or otherwise clinically superior; • the holder of the marketing authorization for the original orphan medicinal product consents to a second orphan medicinal product application; or • the holder of the marketing authorization for the original orphan medicinal product cannot supply sufficient quantities of orphan medicinal product. There is no assurance that we will be able to obtain orphan drug designation for other of our other product candidates. Orphan drug designation does not change the standards for product approval, and there is no assurance that such designation will result in expedited review or approval. **For additional information regarding orphan drug designation in the United States, see the section entitled, " Business — Government Regulation — Licensure and Regulation of Biologics in the United States – Orphan Drug Designation. " For additional information regarding orphan drug designation in the European Union, see the section entitled " Business — Government Regulation — Regulation And Procedures Governing Approval Of Medicinal Products In Europe – Orphan Drug Designation and Exclusivity. "** Adverse Public Perception Of Gene Editing And Cellular Therapy Products May Negatively Impact Demand For, Or Regulatory Approval Of, Our Product Candidates. Our product candidates involve

editing the human genome. The clinical and commercial success of our product candidates will depend in part on public acceptance of the use of gene editing therapies for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that gene editing is unsafe, unethical, or immoral, and, consequently, our products may not gain the acceptance of the public or the medical community. Negative public reaction to gene therapy in general could result in greater government regulation and stricter labeling requirements of gene editing products, including any of our product candidates, and could cause a decrease in the demand for any products we may develop. Adverse public attitudes may adversely impact our ability to enroll clinical trials. Moreover, our success will depend upon physicians prescribing, and their patients being willing to receive, treatments that involve the use of product candidates we may develop in lieu of, or in addition to, existing treatments with which they are already familiar and for which greater clinical data may be available. In particular, gene editing technology is subject to public debate and heightened regulatory scrutiny due to ethical concerns relating to the application of gene editing technology to human embryos or the human germline. For example, in April 2016, a group of scientists reported on their attempts to edit the genome of human embryos to modify the gene for hemoglobin beta. This is the gene in which a mutation occurs in patients with the inherited blood disorder beta thalassemia. Although this research was purposefully conducted in embryos that were not viable, the work prompted calls for a moratorium or other types of restrictions on gene editing of human eggs, sperm, and embryos. Additionally, in November 2018, Dr. Jiankui He, a biophysics researcher who was an associate professor in the Department of Biology of the Southern University of Science and Technology in Shenzhen, China, reportedly claimed he had created the first human genetically edited babies, twin girls. This claim, and another that Dr. He had helped create a second gene- edited pregnancy, was subsequently confirmed by Chinese authorities and was negatively received by the public, in particular by those in the scientific community. News reports indicate that Dr. He was sentenced to three years in prison and fined $ 430, 000 in December 2019 by the Chinese government for illegal medical practice in connection with such activities. In the wake of the claim, the World Health Organization established a new advisory committee to create global governance and oversight standards for human gene editing. The Alliance for Regenerative Medicine in Washington, D. C. has called for a voluntary moratorium on the use of gene editing technologies, including CRISPR / Cas9, in research that involves altering human embryos or human germline cells and has also released principles for the use of gene editing in therapeutic applications endorsed by a number of companies that use gene editing technologies. Similarly, the NIH has announced that it would not fund any use of gene editing technologies in human embryos, noting that there are multiple existing legislative and regulatory prohibitions against such work, including the Dickey- Wicker Amendment, which prohibits the use of appropriated funds for the creation of human embryos for research purposes or for research in which human embryos are destroyed. Laws in the **UK** ~~United Kingdom~~ prohibit genetically modified embryos from being implanted into women, but embryos can be altered in research labs under license from the Human Fertilisation and Embryology Authority. Research on embryos is more tightly controlled in many other European countries. Although we do not use our technologies to edit human embryos or the human germline, such public debate about the use of gene editing technologies in human embryos and heightened regulatory scrutiny could prevent or delay our development of product candidates. More restrictive government regulations or negative public opinion would have a negative effect on our business or financial condition and may delay or impair our development and commercialization of product candidates or demand for any products we may develop. Adverse events in our preclinical studies or clinical trials or those of our competitors or of academic researchers utilizing gene editing technologies, even if not ultimately attributable to product candidates we may identify and develop, and the resulting publicity could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of potential product candidates we may identify and develop, stricter labeling requirements for those product candidates that are approved, and a decrease in demand for any such product candidates. If We Are Unable To Establish Sales And Marketing Capabilities Or Enter Into Agreements With Third Parties To Sell And Market Products Based On Our Technologies, We May Not Be Successful In Commercializing Our Products If And When Any Products Candidates Are Approved And We May Not Be Able To Generate Any Revenue. We do not currently have a sales or marketing infrastructure and, as a company, have no experience in the sale, marketing or distribution of therapeutic products. To achieve commercial success for any approved product candidate for which we retain sales and marketing responsibilities, we must build our sales, marketing, managerial and other non- technical capabilities or make arrangements with third parties to perform these services. In the future, we may choose to build a focused sales and marketing infrastructure to sell, or participate in sales activities with our collaborators for, some of our product candidates, if any are approved. There are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly and our investment would be lost if we cannot retain or reposition our sales and marketing personnel. Factors that may inhibit our efforts to commercialize our product candidates on our own include: • our inability to recruit, train and retain adequate numbers of effective sales and marketing personnel; • the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future product that we may develop; • the lack of complementary treatments to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and • unforeseen costs and expenses associated with creating an independent sales and marketing organization. If we enter into arrangements with third parties to perform sales, marketing and distribution services, our product revenue or the profitability to us from these revenue streams is likely to be lower than if we were to market and sell any product candidates that we develop ourselves. For example, pursuant to our **Amended** A & R Vertex JDCA, Vertex has the right to conduct all commercialization activities relating to **CASGEVY** ~~exa- cel~~ throughout the world and net profits and net losses, as applicable, incurred under the **agreement** ~~A & R Vertex JDCA~~ are allocated 40 % to CRISPR and 60 % to Vertex. In addition, we may not

be successful in entering into arrangements with third parties to sell and market our product candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties and any of them may fail to devote the necessary resources and attention to sell and market our product candidates effectively. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we may not be successful in commercializing our product candidates. Further, our business, results of operations, financial condition and prospects will be materially adversely affected. Even If We, Or Any Collaborators We May Have, Obtain Marketing Approvals For Any Product Candidates We Develop, The Terms Of Approvals And Ongoing Regulation Of Our Products Could Require The Substantial Expenditure Of Resources And May Limit How We, Or They, Manufacture And Market Our Products, Which Could Materially Impair Our Ability To Generate Revenue. Any product candidate for which we **, or any collaborators we may have,** obtain marketing approval, along with the manufacturing processes, post- approval clinical data, labeling, advertising, and promotional activities for such product, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post- marketing information and reports, registration and listing requirements, current Good Manufacturing Practice, or cGMP, requirements relating to quality control, quality assurance and corresponding maintenance of records and documents and requirements regarding recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post- marketing testing and surveillance to monitor the safety or efficacy of the product. The FDA also may place other conditions on approvals including the requirement for a REMS to assure the safe use of the product. If the FDA concludes a REMS is needed, the sponsor of the BLA, must submit a proposed REMS before it can obtain approval. A REMS could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. Accordingly, assuming we, or any collaborators we may have, receive marketing approval for one or more product candidates we develop, we, and such collaborators, and our and their contract manufacturers will continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance, and quality control. In addition, the holder of an approved BLA is obligated to monitor and report adverse events and any failure of a product to meet the specifications in the BLA. The holder of an approved BLA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws. If we and such collaborators are not able to comply with post- approval regulatory requirements, we and such collaborators could have the marketing approvals for our products withdrawn by regulatory authorities and our, or such collaborators', ability to market any future products could be limited, which could adversely affect our ability to achieve or sustain profitability. Further, the cost of compliance with post- approval regulations may have a negative effect on our business, operating results, financial condition, and prospects. Any Product Candidate For Which We, Or Any Collaborators We May Have, Obtain Marketing Approval Could Be Subject To Restrictions Or Withdrawal From The Market, And We Or They May Be Subject To Substantial Penalties If We Or They Fail To Comply With Regulatory Requirements Or If We Or They Experience Unanticipated Problems With Our Products, When And If Any Of Them Are Approved. The FDA and other regulatory agencies closely regulate the post- approval marketing and promotion of biologics to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA and other regulatory agencies impose stringent restrictions on manufacturers' communications regarding off- label use, and if we, or any collaborators we may have, do not market our products for their approved indications, we or they may be subject to enforcement action for off- label marketing by the FDA and other federal and state enforcement agencies, including the United States Department of Justice. Violation of the Federal Food, Drug, and Cosmetic Act and other statutes, including the False Claims Act, relating to the promotion and advertising of prescription products may also lead to investigations or allegations of violations of federal and state health care fraud and abuse laws and state consumer protection laws. In addition, later discovery of previously unknown problems with a product candidate, including adverse events of unanticipated severity or frequency, or with our or other collaborators' manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things: • restrictions on such products, manufacturers, or manufacturing processes; • restrictions on the labeling or marketing of a product; • restrictions on the distribution or use of a product; • requirements to conduct post- marketing clinical trials; • receipt of warning or untitled letters; • restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory biologic recalls; • refusal to approve pending applications or supplements to approved applications that we or our collaborators submit; • fines, restitution, or disgorgement of profits or revenue; • suspension or withdrawal of marketing approvals or revocation of biologics licenses; • suspension of any ongoing clinical trials; • refusal to permit the import or export of our products; • product seizure or detention; and • injunctions or the imposition of civil or criminal penalties. The FDA' s policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we or our collaborators are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or our collaborators are not able to maintain regulatory compliance, we or our collaborators may lose any marketing approval that we or our collaborators may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability. Any government investigation of alleged violations of law, including investigations of any of our vendors, could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may also inhibit our or our collaborators' ability to commercialize any product candidates we may develop and adversely affect our business, financial condition, results of operations, and prospects. The Commercial Success Of Any Of Our **Products or** Product Candidates Will Depend Upon Its Degree Of Market Acceptance By Physicians, Patients, Third- party Payors And Others In The Medical Community. Ethical, social and legal concerns about gene therapy could result in additional regulations

restricting or prohibiting our products. Even with the requisite approvals from FDA in the United States, the EMA in the EU and other regulatory authorities internationally, the commercial success of our **products or** product candidates will depend, in significant part, on the acceptance of physicians, patients and health care payors of gene therapy products in general, and our **products or** product candidates in particular, as medically necessary, cost- effective and safe. Any product that we commercialize may not gain acceptance by physicians, patients, health care payors and others in the medical community. The degree of market acceptance of gene therapy products and, in particular, our product candidates, if approved for commercial sale, will depend on several factors, including: • the efficacy, durability and safety of such product candidates as demonstrated in any future clinical trials; • the potential and perceived advantages of product candidates over alternative treatments; • the cost of treatment relative to alternative treatments; • the clinical indications for which the product candidate is approved by FDA, the EMA or other regulatory authorities; • patient awareness of, and willingness to seek, genotyping; • the willingness of physicians to prescribe new therapies; • the willingness of the target patient population to try new therapies; • the prevalence and severity of any side effects; • product labeling or product insert requirements of FDA, the EMA or other regulatory authorities, including any limitations or warnings contained in a product' s approved labeling; • relative convenience and ease of administration; • the strength of marketing and distribution support; • the timing of market introduction of competitive products; • publicity concerning our products or competing products and treatments; and • sufficient third- party payor coverage and reimbursement. Even if a potential product displays a favorable efficacy and safety profile in preclinical studies and future clinical trials, market acceptance of the product will not be fully known until after it is launched. If our product candidates do not achieve an adequate level of acceptance following regulatory approval, if ever, we may not generate significant product revenue and may not become profitable. We Face Significant Competition In **The Biotechnology** ~~An Environment Of Rapid Technological Change,~~ And **Pharmaceutical Industries** ~~The Possibility That Our Competitors May Achieve Regulatory Approval Before Us Or Develop Therapies That Are More Advanced Or Effective Than Ours, Which May Harm Our Business And Financial Condition And Our Ability To Successfully Market Or Commercialize Our Product Candidates~~ . The biotechnology and pharmaceutical industries, including in the gene editing, gene therapy and cell therapy fields, are characterized by rapidly advancing technologies, intense competition and a strong emphasis on intellectual property and proprietary products. While we believe that our technology, development experience and scientific knowledge provide us with competitive advantages, we currently face, and will continue to face, substantial competition from many different sources, including large pharmaceutical, specialty pharmaceutical and biotechnology companies; academic institutions and governmental agencies; and public and private research institutions, some or all of which may have greater access to capital or resources than we do. For any products that we may ultimately commercialize, not only will we compete with any existing therapies and those therapies currently in development, but we will also have to compete with new therapies that may become available in the future. We compete in the segments of the pharmaceutical, biotechnology and other related markets that utilize technologies encompassing genomic medicines to create therapies, including gene editing, gene therapy and cell therapy. In addition, we compete with companies working to develop therapies in areas related to our specific research and development programs. Our platform and product focus is on the development of therapies using CRISPR / Cas9 gene editing technology. ~~We are aware~~ **For a detailed discussion** of ~~several companies focused on developing~~ **the competition that we face with respect to our business, including our platform, product indications, other technologies (e. g. small molecule, antibody, or protein** therapies **),** ~~in various indications using CRISPR / Cas9~~ gene editing technology, ~~including Intellia Therapeutics and Editas Medicine. In addition, several academic groups have developed new~~ gene **or cell** ~~editing technologies based on CRISPR / Cas9, such as base editing and prime editing, that may have utility in therapeutic development. Companies seeking to develop~~ therapies ~~based on these technologies include Beam Therapeutics and Prime Medicine There are also companies developing therapies using additional gene editing technologies~~ , **intellectual property** ~~such as TALENs~~ , ~~meganucleases and ZFNs. These companies include 2seventy bio, Allogene Therapeutics, Cellectis, Precision BioSciences and Sangamo Therapeutics. We are also aware of companies developing therapies in various areas related to our specific research and development programs. In hemoglobinopathies, these companies include Beam Therapeutics, bluebird bio, Editas Medicine, Graphite Bio, Merck Sharp & Dohme, Novartis Pharmaceuticals, Pfizer, and Sangamo Therapeutics. In immuno- oncology, these companies include 2seventy bio, Adicet Bio, Allogene Therapeutics, Bristol Myers Squibb, Caribou Biosciences, Cellectis, Century Therapeutics, Fate Therapeutics, Gilead Sciences, Legend Biotech, Novartis Pharmaceuticals, Poseida Therapeutics and Precision BioSciences. In regenerative medicine, these companies include BlueRock Therapeutics (acquired by Bayer in 2019), Sana Biotechnology and Semma Therapeutics (acquired by Vertex in 2019). In in vivo, these companies include Alnylam Pharmaceuticals, Arrowhead Pharmaceuticals, BioMarin Pharmaceutical, Intellia Therapeutics, Ionis Pharmaceuticals and Verve Therapeutics. Gene editing is a highly active field of research and~~ new technologies, ~~related or unrelated to CRISPR, may be discovered and create new competition. These new technologies could have advantages over CRISPR / Cas9 gene editing in some applications and there can be no certainty that other gene editing technologies will not be considered better or more attractive than our technology for the development of products. For example, Cas9 may be determined to be less attractive than other CRISPR proteins, such as Cas12a or novel Cas enzymes that have yet to be discovered, or other CRISPR- associated nuclease variants that can edit human DNA, such as base editors and prime editors. In addition to competition from other gene editing therapies or gene or cell therapies, any product we may develop may also face competition from other types of therapies, such as small molecule, antibody or protein therapies. In addition, new scientific discoveries may cause CRISPR / Cas9 technology, or gene editing as a whole, to be considered an inferior form of therapy. In addition, many of our current or potential competitors, either alone or with their collaboration partners, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology, and gene and cell therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early- stage companies may~~

~~also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management~~ personnel **,** ~~and establishing~~ clinical trial **locations** ~~sites and patient registration for clinical trials~~ , **reimbursement** ~~as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity~~ **opportunities and collaborators, please see the section entitled " Business — Competition ". If we are unable to compete successfully in this highly competitive biopharmaceutical industry, our business, financial condition and results of operations** could be **materially adversely affected** ~~reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient, have broader acceptance and higher rates of reimbursement by third- party payors or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, technologies developed by our competitors may render our potential product candidates uneconomical or obsolete, and we may not be successful in marketing any product candidates we may develop against competitors. The key competitive factors affecting the success of all of our programs are likely to be their efficacy, safety, convenience, and availability of reimbursement. If our current programs are approved for the indications for which we are currently planning clinical trials, they may compete with other products currently under development, including gene editing, gene therapy, and cell therapy products. Competition with other related products currently under development may include competition for clinical trial sites, patient recruitment, and product sales. In addition, due to the intense research and development taking place in the gene editing field, including by us and our competitors, the intellectual property landscape is in flux and highly competitive. There may be significant intellectual property related litigation and proceedings relating to our owned and in- licensed, and other third- party, intellectual property and proprietary rights in the future. For example, see our discussion of the ' 048 interference, the ' 115 interference and European opposition proceedings in " Risks Related to Intellectual Property — Third- party Claims Of Intellectual Property Infringement Against Us, Our Licensors Or Our Collaborators May Prevent Or Delay Our Product Discovery and Development Efforts. " Moreover, as a result of the expiration or successful challenge of our patent rights, we could face more litigation with respect to the validity and / or scope of patents relating to our competitors' products and our patents may not be sufficient to prevent our competitors from commercializing competing products. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any products that we may develop and commercialize~~ . Even If We Are Able To Commercialize Any Product Candidates, Such Products May Become Subject To Unfavorable Pricing Regulations, Third- party Reimbursement Practices, Or Healthcare Reform Initiatives, Which Would Harm Our Business. The regulations that govern marketing approvals, pricing, and reimbursement for new biologic products vary widely from country to country. Some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some non- U. S. markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if any product candidates we may develop obtain marketing approval. Our ability to commercialize any products successfully also will depend in part on the extent to which reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers, and other organizations. Third- party payors, such as private health insurers, health maintenance organizations, and governmental programs such as Medicare and Medicaid, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U. S. healthcare industry and elsewhere is cost containment. Governmental and private third- party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third- party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that reimbursement will be available for any product that we commercialize and, if reimbursement is available, the level of reimbursement. Reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval. ~~See the sections entitled " Business — Coverage, Pricing and Reimbursement " and " Business — Healthcare Reform. "~~ There may be significant delays in obtaining reimbursement for newly approved products, and reimbursement coverage may be more limited than the purposes for which the product is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that any product will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale, and distribution. Interim reimbursement levels for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the product and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost products and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of products from countries where they may be sold at lower prices than in the United States. Third- party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and profitable payment rates from both government- funded and private payors for any approved products we may develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products, and our overall financial condition. **For additional information, see the sections entitled " Business — Coverage, Pricing and Reimbursement " and " Business — Healthcare Reform. " See**

also, " Risk Factors — Risks Related to Our Relationships with Third Parties **— We Have Partnered With Vertex On Our Lead Program CASGEVY; Vertex Has Significant Control Over The CAGEVY Program. "** Our Collaborators And Strategic Partners May Control Aspects Of Our Clinical Trials and Commercialization Efforts, Which Could Result In Delays And Other Obstacles In The Commercialization Of Our Proposed Products And Materially Harm Our Results Of Operations. We have entered into strategic collaborations and licenses, including, for example, with Vertex ~~and ViaCyte (which was acquired by Vertex in 2022)~~ , and may enter into additional collaborations and licenses with other third parties in the future. For some programs, we also depend on, or may in the future depend on, third- party collaborators and strategic partners to design and conduct our clinical trials, and for any approved products, the commercialization of such products. Some of these collaborations provide us with important technologies in order to more fully develop our product candidates and we may enter into collaborations with other companies to provide us with important technologies or funding for our programs. The success of these arrangements will depend heavily on the efforts and activities of our collaborators and licensing partners. Collaborators generally have significant discretion in determining the efforts and resources that they will apply to these collaborations and collaborators may not perform their obligations as expected. In some situations, we may not be able to influence our collaboration partners' decisions regarding the development and commercialization of our partnered product candidates, and as a result, our collaboration partners may not pursue or prioritize the development and commercialization of those partnered product candidates in a manner that is in our best interest. In addition, collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that the competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours. Disagreements between parties to a collaboration arrangement regarding clinical development and commercialization matters can lead to delays in the development process or commercializing the applicable product candidate and, in some cases, termination of the collaboration arrangement or result in litigation or arbitration, which would be time- consuming and expensive. Collaborators may also fail to comply with applicable regulatory requirements regarding the development, manufacture, distribution or marketing of a product candidate or product. Licensors generally have sole discretion in determining the efforts and resources that they will apply to the licensed products. As a result, we may not be able to conduct any of our partnered programs in the manner or on the time schedule we currently contemplate, which may negatively impact our business operations. In addition, if any of these collaborators or strategic partners withdraw support for our programs or proposed products or otherwise impair their development or commercialization, our business could be negatively affected. Additionally, if one of our collaborators terminates its agreement with us, we may find it more difficult to attract new collaborators and our perception in the business and financial communities could be adversely affected. We ~~Have Partnered With Vertex On Our Lead Program Exa- cel; Vertex Has Significant Control Over The Exa- cel Program. We~~ have entered into a series of agreements with Vertex that contemplate certain research, development, manufacturing and commercialization activities involving various targets. Pursuant to these agreements, Vertex has sole authority to conduct certain activities. For example, under our 2015 Collaboration Agreement with Vertex to research, develop and commercialize new treatments aimed at the underlying genetic causes of human diseases, Vertex had sole authority to select genetic targets to pursue and we do not have control over the development of any product candidates for the selected genetic targets. In addition, under our 2019 Collaboration Agreement with Vertex, Vertex has sole authority to develop and commercialize products for the treatment of DMD and DM1 under the agreement (subject to our option to co- develop and co- commercialize products for the treatment of DM1). ~~In addition, in the third quarter of 2022, Vertex announced it had acquired ViaCyte, pursuant to which it will have joint rights to develop and commercialize product candidates and shared products for use in the treatment of diabetes type 1, diabetes type 2 and insulin dependent / requiring diabetes throughout the world.~~ Additionally, ~~we are developing and preparing to commercialize exa- cel for TDT and SCD in partnership with Vertex~~ under the **Amended** A & R Vertex JDCA ~~. Under the A & R Vertex JDCA~~ , subject to the terms and conditions of such agreement, Vertex has the right to conduct all research, development, manufacturing and commercialization activities relating to the specified product candidates and products (including ~~exa- cel~~ **CASGEVY, which received approval or clearance to be marketed for the treatment of for TDT and SCD from certain regulatory authorities in certain jurisdictions in 2023 and a subsequent approval in 2024**) throughout the world subject to our reserved right to conduct certain activities. While we will continue to participate in certain aspects of such activities in an observer capacity unless and to the extent otherwise agreed to by the parties, and we and Vertex have an equal number of representatives on the joint oversight committee and transition committee, Vertex controls the development of **CASGEVY** ~~exa- cel~~ or any future product candidates subject to the **Amended** A & R Vertex JDCA. Our lack of control over the clinical development, manufacturing, regulatory submission and commercialization activities in certain of our agreements with Vertex could cause delays or other difficulties in the development and commercialization of product candidates, **including CASGEVY,** which may prevent among other things, completion of intended IND filings in a timely fashion, if at all, or the completion **of** or **cause a** delay in BLA filings **or other applicable regulatory or required pricing approvals. We must rely on Vertex to manufacture and commercialize CASGEVY** . For example, ~~there~~ -- **the** ~~is no~~ **manufacture of cell and genetic therapies requires significant expertise, and even with the relevant experience and expertise, manufacturers of cell and genetic therapy products often encounter difficulties in production, including difficulties with production costs and yields, quality control, and compliance with federal, state and foreign regulations. We cannot make any** ~~assurance~~ **assurances** that **Vertex** ~~data obtained from our partnered exa- cel programs~~ will **not encounter any** ~~indicate clinically meaningful benefit or support approval~~ of **these problems or** ~~a BLA, and we cannot be certain~~ that **it** ~~data from CLIMB- 111 and CLIMB- 121 clinical trials~~ will be ~~sufficiently robust~~ **able to resolve or address problems that occur in a timely manner, or at all. In addition, to increase production to commercial levels, Vertex is making significant investments to coordinate manufacturing, testing, and logistics activities at a larger scale across multiple facilities to serve the geographies in which CASGEVY is approved. We cannot make any assurances that Vertex will be able to increase production to commercial**

levels in a timely manner, or at all. In addition, we must rely on Vertex to obtain pricing approvals in certain jurisdictions, establish and maintain relationships with authorized treatment centers that will be treating the patients who receive CASGEVY, and manage manufacturing capabilities and supply chain operations in the coordination and delivery of CASGEVY to patients at such authorized treatment centers. We have no involvement in these and other commercialization efforts for CASGEVY from ~~a safety~~ **which we may receive revenue** and ~~/~~ **cannot control the extent or effectiveness of such commercialization efforts. Our revenues from CASGEVY may fall below** ~~or~~ **our expectations and the expectations of** ~~efficacy perspective to support either conditional approval or~~ **our** ~~full approval. The FDA may require that we~~ **shareholders, which could have a material adverse effect on our results of operations** and ~~Vertex conduct~~ **the market price of our common shares. In** ~~additional~~ -- **addition** ~~or larger pivotal trials before we and Vertex can complete our rolling submission or obtain approval of a BLA. Furthermore~~ , ~~we are required to submit data relating to certain release assays designed to confirm~~ the **net profits** ~~quality, purity~~ and **net losses,** ~~strength (including potency) of exa- cel~~ as **applicable, incurred** ~~a condition for completing the BLA submission. Under~~ **under** the **Amended** A & R Vertex JDCA ~~,~~ **are allocated 40 % to CRISPR and 60 % to** Vertex ~~is responsible for such clinical trials and manufacturing~~ . ~~If~~ Vertex ~~is unable~~ **may have additional expenditures related** to ~~submit~~ the **CASGEVY program that we cannot predict and that we will be** required **to pay our portion of** ~~data in a timely manner, there is the potential for~~ - **or** ~~further delaying the completion~~ **agree to pay a portion** of ~~our BLA submission, with the potential consequence of delaying any approval and commercial launch of exa- cel~~ in the ~~United States~~ **future pursuant to the agreement** . In addition, the termination **of any** of our agreements with Vertex would prevent us from receiving any milestone, royalty payments and other benefits under ~~that~~ **such** agreement, which ~~may~~ **could** have a materially adverse effect on our results of operations **and the market price of our common shares** . If Conflicts Arise Between Us And Our Collaborators Or Strategic Partners, These Parties May Act In A Manner Adverse To Us And Could Limit Our Ability To Implement Our Strategies. If conflicts arise between our corporate or academic collaborators or strategic partners and us, the other party may act in a manner adverse to us and could limit our ability to implement our strategies. Some of our academic collaborators and strategic partners are conducting multiple product development efforts within each area that is the subject of the collaboration with us. Our collaborators or strategic partners, however, may develop, either alone or with others, products in related fields that are competitive with the products or potential products that are the subject of these collaborations ~~. For example, Vertex may prioritize its solely owned diabetes program to the detriment of the diabetes program we have with ViaCyte (which was acquired by Vertex in 2022)~~ . Competing products, either developed by the collaborators or strategic partners or to which the collaborators or strategic partners have rights, may result in the withdrawal of partner support for our product candidates. Current or future collaborators or strategic partners could also become our competitors in the future. Our collaborators or strategic partners could develop competing products, preclude us from entering into collaborations with their competitors, fail to obtain timely regulatory approvals, terminate their agreements with us prematurely, or fail to devote sufficient resources to the development and commercialization of products. Any of these developments could harm our product development efforts. Our Collaborators Or Strategic Partners May Decide To Adopt Alternative Technologies Or May Be Unable To Develop Commercially Viable Products With Our Technology, Which Would Negatively Impact Our ~~Revenues~~ **Financial Results** And Our Strategy To Develop These Products. Our collaborators or strategic partners may adopt alternative technologies, which could decrease the marketability of our CRISPR / Cas9 gene editing technology ~~. For example, Vertex is also advancing other therapeutic product candidates targeting diabetes~~ . Additionally, because our current collaborators or strategic partners are and we anticipate that any future collaborators or strategic partners will be working on more than one development project, they could choose to shift their resources to projects other than those they are working on with us. If they do so, this would delay our ability to test our technology and would delay or terminate the development of potential products based on our CRISPR / Cas9 gene editing technology. Further, our collaborators and strategic partners may elect not to develop products arising out of our collaborative and strategic partnering arrangements or to devote sufficient resources to the development, manufacturing, marketing or sale of these products. ~~The~~ **For example, ViaCyte (a wholly owned subsidiary of Vertex) elected to opt- out of our diabetes collaboration. As a result, going forward we will be solely responsible for the costs associated with the diabetes program and we will owe ViaCyte certain opt- out royalties pursuant to the ViaCyte JDCA, which will increase our expenses. Furthermore, the** failure to develop and commercialize a product candidate pursuant to our agreements with our current or future collaborators would prevent us from receiving future milestone and royalty payments which would negatively impact our ~~revenues~~ **financial results** . We May Seek To Establish Additional Collaborations And, If We Are Not Able To Establish Them On Commercially Reasonable Terms, We May Have To Alter Our Development And Commercialization Plans. Our product candidate development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. For some of our product candidates, we may decide to collaborate with additional pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates. We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for any additional collaborations will depend, among other things, upon our assessment of the collaborator' s resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator' s evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by FDA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing drugs, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. The terms of any additional collaborations or other arrangements that we may establish may not be favorable to us. We may also be restricted under existing collaboration

agreements from entering into future agreements on certain terms with potential collaborators. For example, we have granted exclusive rights to Vertex for certain genetic targets, and during the term of the collaboration agreements, we will be restricted from granting rights to other parties to use our gene editing technology to pursue therapies that address these genetic targets. The non- competition provisions in ~~this~~ **such** ~~agreement~~ **agreements** could limit our ability to enter into strategic collaborations with future collaborators. We may not be able to negotiate additional collaborations on a timely basis, on acceptable terms, or at all. Collaborations are complex and time- consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. If we are unable to negotiate and enter into new collaborations, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue **or engage in workforce reductions to save capital** . We **Rely On and** Expect To Rely On Third Parties To Conduct Our Clinical Trials And Certain Aspects Of Our Preclinical Studies For Our Product Candidates. If These Third Parties Do Not Successfully Carry Out Their Contractual Duties, Comply With Regulatory Requirements Or Meet Expected Deadlines, We May Not Be Able To Obtain Regulatory Approval For Or Commercialize Our Product Candidates And Our Business Could Be Substantially Harmed. We expect to rely on medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct future clinical trials and we currently rely on third parties to conduct certain aspects of our preclinical studies for our product candidates. Nevertheless, we are responsible for ensuring that each of our preclinical studies **, clinical trials** and any future **preclinical studies and** clinical trials we sponsor are conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards and our reliance on CROs will not relieve us of our regulatory responsibilities. For example, we will remain responsible for ensuring that each ~~of~~ **such study** ~~our~~ **or** clinical ~~trials~~ **trial** is conducted in accordance with the general investigational plan and protocols for ~~the~~ **such study or** trial. Moreover, the FDA requires us to comply with regulations, commonly referred to as Good Clinical Practices, or GCPs, for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity, and confidentiality of trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government- sponsored database, ClinicalTrials. gov, within certain timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions. For any violations of laws and regulations during the conduct of our preclinical studies and clinical trials, we could be subject to warning letters or enforcement action that may include civil penalties up to and including criminal prosecution **. We also rely on and expect to continue to rely on contract manufacturing organizations to produce certain of our clinical trial materials. See, for example," Risk Factors-- Risks Related to Manufacturing-- We Expect To Rely On Third Parties To Manufacture Our Clinical Product Supplies, And We Intend To Rely On Third Parties For At Least A Portion Of The Manufacturing Process Of Our Product Candidates. Our Business Could Be Harmed If The Third Parties Experience Supply Chain Shortages, Fail To Provide Us With Sufficient Quantities Of Product Inputs Or Fail To Do So At Acceptable Quality Levels Or Prices" for additional information** . We and our CROs will be required to comply with regulations, including GCPs, for conducting, monitoring, recording and reporting the results of preclinical studies and clinical trials to ensure that the data and results are scientifically credible and accurate and that the trial patients are adequately informed, among other things, of the potential risks of participating in clinical trials and their rights are protected. These regulations are enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable health regulatory authorities for any drugs in clinical development. The FDA enforces GCP regulations through periodic inspections of clinical trial sponsors, principal investigators and trial sites. If we or our CROs fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and FDA or comparable health regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA will determine that any of our future clinical trials will comply with GCPs. In addition, our future clinical trials must be conducted with product candidates produced in accordance with the requirements in cGMP regulations. Our failure or the failure of our CROs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action and require significantly greater expenditures. Although we **generally** ~~intend to~~ design the clinical trials for our product candidates **and intend to design the clinical trials for our future product candidates** , CROs **conduct and** will **continue to** conduct all of the clinical trials. As a result, many important aspects of our development programs, including their conduct and timing, will be outside of our direct control. Our reliance on third parties to conduct future preclinical studies and clinical trials will also result in less direct control over the management of data developed through preclinical studies and clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may: • have staffing difficulties; • fail to comply with contractual obligations; • experience regulatory compliance issues; • undergo changes in priorities or become financially distressed; or • form relationships with other entities, some of which may be our competitors. These factors may materially adversely affect the willingness or ability of third parties to conduct our preclinical studies and clinical trials and may subject us to unexpected cost increases that are beyond our control. If the CROs do not perform preclinical studies and future clinical trials in a satisfactory manner, breach their obligations to us or fail to comply with regulatory requirements, the development, regulatory approval and commercialization of our product candidates may be delayed, we may not be able to obtain regulatory approval and commercialize our product candidates, or our development

programs may be materially and irreversibly harmed. If we are unable to rely on preclinical and clinical data collected by our CROs, we could be required to repeat, extend the duration of, or increase the size of any clinical trials we conduct and this could significantly delay commercialization and require significantly greater expenditures. Our Relationships With Healthcare Providers, Physicians, And Third- party Payors **Are** ~~Will Be~~ Subject To Applicable Anti- kickback, Fraud And Abuse And Other Healthcare Laws And Regulations, Which Could Expose Us To Criminal Sanctions, Civil Penalties, Exclusion From Government Healthcare Programs, Contractual Damages, Reputational Harm And Diminished Profits And Future Earnings. **To** ~~Although we do not currently have any products on~~ the **extent that** ~~market, once~~ we ~~begin commercializing~~ **commercialize** ~~our~~ product candidates ~~, if ever~~ **or provide support and assistance to collaborators who commercialize medical products** , we will be subject to additional healthcare statutory and regulatory requirements and enforcement by the U. S. federal government and states as well as other national, regional or local governments in other jurisdictions in which we conduct our business. Healthcare providers, physicians and third- party payors play a primary role in the recommendation and prescription of any **products or** product candidates that we may develop for which we obtain marketing approval. Our **current and** future arrangements with third- party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell, and distribute our product candidates for which we obtain marketing approval. See the section entitled " Business — Healthcare Law and Regulation. " The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order, or use of medicinal products is prohibited in the EU. The provision of benefits or advantages to induce or reward improper performance generally is also governed by the national anti- bribery laws of EU Member States, and the Bribery Act 2010 in the UK. Infringement of these laws could result in substantial fines and imprisonment. EU Directive 2001 / 83 / EC, which is the EU Directive governing medicinal products for human use, further provides that, where medicinal products are being promoted to persons qualified to prescribe or supply them, no gifts, pecuniary advantages or benefits in kind may be supplied, offered or promised to such persons unless they are inexpensive and relevant to the practice of medicine or pharmacy. This provision has been transposed into the Human Medicines Regulations 2012 and so remains applicable in the UK despite its departure from the EU. Payments made to physicians in certain EU Member States must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician' s employer, his or her competent professional organization, and / or the regulatory authorities of the individual EU Member States. These requirements are provided in the national laws, industry codes, or professional codes of conduct applicable in the EU Member States. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines, or imprisonment. Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations, or case law involving applicable fraud and abuse or other healthcare laws and regulations. Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations, including activities that may be conducted by sales and marketing team we establish, are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal, and administrative penalties, damages, fines, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil, or administrative sanctions, including exclusions from government funded healthcare programs. Liabilities they incur pursuant to these laws could result in significant costs or an interruption in operations, which could have a material adverse effect on our business, financial condition, results of operations, and prospects. ~~Risks Related to Manufacturing~~ Gene Editing Products Are Novel And May Be Complex And Difficult To Manufacture. We Could Experience Manufacturing Problems That Result In Delays In The Development Or Commercialization Of Our Product Candidates Or Otherwise Harm Our Business. The manufacturing process used to produce CRISPR / Cas9- based product candidates **are novel,** may be complex, ~~as they are novel~~ and ~~have not been validated for~~ **there is limited industry experience implementing and executing such processes to meet** clinical and commercial production **demand** . Several factors could cause production interruptions, including inability to develop novel manufacturing processes, equipment malfunctions, facility contamination, raw material shortages or contamination, natural disasters, including ~~the coronavirus pandemic~~ **pandemics** , disruption in utility services, human error or disruptions in the operations of our suppliers, including acquisition of ~~the~~ **a** supplier by a third party or declaration of bankruptcy. The expertise required to manufacture these product candidates may be unique to a particular contract manufacturing ~~organizations~~ **organization** , and as a result, it would be difficult and time consuming to find an alternative contract manufacturing organization. Failure or process defects in any of the interrelated systems at either our manufacturing facility ~~, once validated,~~ or those of our third- party manufacturers, could adversely impact our ability to manufacture and supply cell therapy product candidates and certain components thereof intended for research, clinical and, if approved, commercial production. ~~For additional information regarding the impact of the coronavirus pandemic, please see " Our Business May Be Adversely Affected By The Ongoing Coronavirus Pandemic, Including the Emergence of Additional Variants. "~~ Our product candidates will require processing steps that are more complex than those required for most small molecule drugs. Moreover, unlike small molecules, the physical and chemical properties of biologics generally cannot be fully characterized. As a result, assays of the finished product may not be sufficient to ensure that the product will perform in the intended manner. Accordingly, we will employ multiple steps to control the manufacturing process to assure that the process works and the product candidate is made strictly and consistently in compliance with the process. Problems with the manufacturing process, even minor deviations from the normal process, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims or insufficient inventory **, or other supply disruptions. If**

microbial, viral or other contaminations are discovered in our product candidates or in the manufacturing facilities in which our product candidates are made, production at such manufacturing facilities may be interrupted for an extended period of time to investigate and remedy the contamination . We may encounter problems achieving adequate quantities and quality of clinical grade materials that meet FDA, the EMA or other applicable standards or specifications with consistent and acceptable production yields and costs. In addition, the FDA, the EMA and other health regulatory authorities may require us to submit samples of any lot of any approved product together with the protocols showing the results of applicable tests at any time. Under some circumstances, the FDA, the EMA or other health regulatory authorities may require that we not distribute a lot until the relevant agency authorizes its release. Slight deviations in the manufacturing process, including those affecting quality attributes and stability, may result in unacceptable changes in the product that could result in lot failures or product recalls. Lot failures could cause us to delay product launches or clinical trials and we may need to conduct product recalls, all of which could be costly to us and otherwise harm our business, financial condition, results of operations and prospects. Problems in our manufacturing process could restrict our ability to meet market demand for our products. We also may encounter problems hiring and retaining directly or through contract manufacturing organizations the experienced scientific, quality assurance, quality control and manufacturing personnel needed to operate our manufacturing processes, which could result in delays in production or difficulties in maintaining compliance with applicable regulatory requirements. Any problems in our supply chain, manufacturing process or facilities could result in delays in planned clinical trials and increased costs, and could make us a less attractive collaborator for potential partners, including larger pharmaceutical companies and academic research institutions, which could limit our access to additional attractive development programs. Problems in our manufacturing process could restrict our ability to meet potential future market demand for products. **Our partner, Vertex, is the manufacturer and exclusive license holder of CASGEVY. For additional information regarding the manufacture of CASGEVY, please see " Risk Factors — Risks Related to Our Relationships with Third Parties — We Have Partnered With Vertex On Our Lead Program CASGEVY; Vertex Has Significant Control Over The CAGEVY Program. "** The Manufacturing Facilities For Our Product Candidates Are Subject To Rigorous Regulations And Failure To Obtain Or Maintain Regulatory Approvals Or Operate In Line With Established cGMPs And International Best Practices Could Delay Or Impair Our Ability To Commercialize Our Product Candidates. We and the third- party manufacturers of our product candidates are subject to applicable cGMPs prescribed by the FDA and other rules and regulations prescribed by the EMA and other regulatory authorities. To obtain FDA and EMA approval for our product candidates in the United States and Europe, we need to undergo strict pre- approval inspections of our or our third- party manufacturing facilities. When inspecting our or our contractors' manufacturing facilities, the FDA or EMA might cite cGMP deficiencies, both minor and significant, which we may not be required to disclose. Remediating deficiencies can be laborious and costly and consume significant periods of time. Moreover, if the FDA or EMA notes deficiencies as a result of its inspection, it will generally reinspect the facility to determine if the deficiency has been remediated to its satisfaction. The FDA or EMA may note further deficiencies as a result of its reinspection, either related to the previously identified deficiency or otherwise. If we or the manufacturers of our product candidates cannot satisfy the FDA and EMA as to compliance with cGMP in a timely basis, marketing approval for our product candidates could be seriously delayed, which in turn would delay commercialization of our product candidates. We Are Subject To Regulatory And Operational Risks Associated With Our Internal Manufacturing Facility ~~And At Those Of Our Third- party Contract Manufacturing Partners~~ . ~~In the fourth~~ **We have an approximately 50, 000** ~~quarter~~ -- **square foot** ~~of 2021, we completed construction of a new~~ cell therapy manufacturing facility in Framingham, Massachusetts **intended for** ~~, that, among other things, once validated, will be capable of supporting research,~~ clinical and commercial production of our ~~cell therapy~~ product candidates and certain components thereof for certain of our programs. We are ~~progressing the~~ **following cGMP processes necessary to release product for our clinical trials and meet all requirements from** regulatory ~~validation activities required~~ **agencies, including the FDA,** to **allow** ~~bring this facility into cGMP compliance and to enable~~ us to ~~produce~~ **support research, clinical and commercial production of our wholly- owned** cell therapy product ~~supply suitable~~ **candidates and certain components thereof** for **certain of our programs** ~~human administration in the future~~ . We ~~have never before built and operated our own manufacturing facility, and we~~ can provide no assurances that we will be able to **support or** ~~build out and~~ operate our **facility to support our intended** internal manufacturing **capabilities and /** ~~capacity or achieve required validation of our~~ - **or** ~~Framingham facility~~ **needs or comply with regulatory agency requirements** . While the design of ~~the~~ **our** facility is based on current standards for biotechnology facilities, it ~~has~~ **was** not ~~yet been reviewed or~~ pre- approved by any regulatory agency, nor has the facility been inspected by any regulatory agency such as the FDA. ~~We could incur delays in implementing the full operational state of the facility, causing delays to clinical supply or extended use of our third- party contract manufacturing partners, resulting in unplanned expenses.~~ In constructing our facility in Framingham, Massachusetts, we have incurred substantial expenditures, and expect to incur significant additional expenditures ~~in validating and~~ operating ~~the~~ **our** facility in the future. We Expect To Rely On Third Parties To Manufacture Our Clinical Product Supplies, And We Intend To Rely On Third Parties For At Least A Portion Of The Manufacturing Process Of Our Product Candidates. Our Business Could Be Harmed If The Third Parties Experience Supply Chain Shortages, Fail To Provide Us With Sufficient Quantities Of Product Inputs Or Fail To Do So At Acceptable Quality Levels Or Prices. **Our Third Party Contract Manufacturing Partners Are Subject To Regulatory And Operational Risks.** Although we have ~~completed construction of~~ **established internal manufacturing capabilities and have established** our **own cell therapy manufacturing** facility ~~in Framingham~~ , ~~Massachusetts,~~ we **still** ~~have not yet completed regulatory validation activities and we do not own any facility that currently may be used as our clinical- scale manufacturing and processing facility and must~~ rely on outside vendors to manufacture supplies and process our product candidates in connection with any clinical trial we undertake of such product candidates. We have not yet caused any product candidates to be manufactured or processed on a commercial scale and may not be able to do so for any of our product candidates. We will make changes as we work to optimize the manufacturing process, and we cannot be

sure that even minor changes in the process will result in therapies that are safe and effective. The facilities used to manufacture our product candidates must be evaluated by the FDA, or other health regulatory agencies in other jurisdictions, pursuant to inspections that will be conducted after we submit an application to the FDA or other health regulatory agencies. We will not control the manufacturing process of, and will be completely dependent on, our contract manufacturing partners for compliance with regulatory requirements, known as cGMP requirements, for manufacture of our product candidates. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, they will not be able to secure and / or maintain regulatory approval for their manufacturing facilities or regulatory authorities may cite them for deficiencies, and we may not be able to obtain or may be delayed in obtaining regulatory approval from the FDA or other regulatory authorities for our product candidates. In addition, we have no direct control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable health regulatory authority does not approve these facilities or cites these facilities for deficiencies for the manufacture of our product candidates or if it withdraws any such approval or cites deficiencies in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. In addition, if our contract manufacturers are unable to timely perform or become distracted as a result of actions taken by the FDA or a comparable health regulatory authority or as a result of the coronavirus pandemic, we may experience manufacturing delays or may need to find alternative manufacturing facilities, which in each case, would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. Our reliance on a limited number of third- party manufacturers exposes us to a number of risks, including the following: • we may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers is limited; • a new manufacturer would have to be educated in, or develop substantially equivalent processes for, the production of our product candidates; • a change in manufacturers or certain changes in manufacturing processes / procedures will require that we conduct a manufacturing comparability study to verify that any new manufacturer or manufacturing process / procedures will produce our product candidate according to the specifications previously submitted to the FDA or other regulatory authority, and such study may be unsuccessful; • our third- party manufacturers might be unable to timely manufacture our product candidates or produce the quantity and quality required to meet our clinical and commercial needs, if any; • contract manufacturers may not be able to execute our manufacturing procedures and other logistical support requirements appropriately; • our contract manufacturers may not perform as agreed, may not devote sufficient resources to our product candidates or may not remain in the contract manufacturing business for the time required to supply our clinical trials; • manufacturers are subject to ongoing periodic unannounced inspection by the FDA and corresponding state agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards and we have no control over third- party manufacturers' compliance with these regulations and standards; • we may not own, or may have to share, the intellectual property rights to any improvements made by our third- party manufacturers in the manufacturing process for our product candidates; • our third- party manufacturers could breach or terminate their agreements with us; • raw materials and components used in the manufacturing process, particularly those for which we have no other source or supplier, may not be available or may not be suitable or acceptable for use due to material or component defects; • our contract manufacturers and critical reagent suppliers may be subject to inclement weather, as well as natural or man- made disasters; ~~and~~ • our contract manufacturers may have unacceptable or inconsistent product quality success rates and yields, and we have no direct control over our contract manufacturers' ability to maintain adequate quality control, quality assurance and qualified personnel **; and • our contract manufacturers may manufacture defective or otherwise dangerous products that could result in injury to consumers during clinical trials or once commercialized for sale to the public, if not discovered by us** . Each of these risks could delay or prevent the completion of our clinical trials or the approval of any of our product candidates by the FDA, result in higher costs or adversely impact commercialization of our product candidates, if approved. In addition, we will rely on third parties to perform certain specification tests on our product candidates prior to delivery to patients. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm and the FDA could place significant restrictions on our company until deficiencies are remedied. Risks Related to Employee Matters, Managing Growth and Other Risks Related to Our Business Our Future Success Depends On Our Ability To Retain Key Executives And To Attract, Retain And Motivate Qualified Personnel. We are highly dependent on the research and development, clinical, commercial and business development expertise of Dr. Samarth Kulkarni, our Chief Executive Officer, as well as the other principal members of our management, scientific and clinical team. Although we have entered into employment agreements with our executive officers, each of them may terminate their employment with us at any time. We do not maintain " key person " insurance for any of our executives or other employees. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. The loss of the services of our executive officers or other key employees or consultants could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. If we are unable to retain high quality personnel, our ability to pursue our growth strategy will be limited. We will also need to recruit and retain qualified scientific, clinical and commercial personnel as we advance the development of our product candidates and product pipeline. We may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific, clinical and commercial personnel from universities and research institutions. Failure to succeed in clinical trials may make it more challenging to recruit and retain qualified scientific personnel. Swiss Corporate Governance With Respect To Executive Compensation May Affect Our Business. Swiss corporate law, among other things, (a)

requires ~~a~~ **an annual** binding shareholder " say on pay " vote with respect to the compensation of members of our executive management **team** and board of directors, (b) generally prohibits the making of severance, advance, transaction premiums and similar payments to members of our executive management and board of directors and (c) requires companies to specify various compensation- related matters in their articles of association, thus requiring them to be approved by a shareholders' vote. At our annual general meetings, our shareholders are required to approve the maximum aggregate compensation of our board of directors and our executive management team. Swiss law further provides for criminal penalties against directors and members of executive management in case of non- compliance with certain of the requirements regarding compensation. Such provisions may negatively affect our ability to attract and retain executive management and members of our board of directors. Our Employees, Principal Investigators, Consultants And Commercial Partners May Engage In Misconduct Or Other Improper Activities, Including Non- compliance With Regulatory Standards And Requirements And Insider Trading. We are exposed to the risk of fraud or other misconduct by our employees, consultants, commercial partners, and principal investigators. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in the EU and other jurisdictions, provide accurate information to the FDA, the European Commission, and other regulatory authorities, comply with healthcare fraud and abuse laws and regulations in the United States and in other jurisdictions, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self- dealing and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. Such misconduct also could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, financial condition, results of operations, and prospects, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. If We Fail To Comply With Environmental, Health And Safety Laws And Regulations, We Could Become Subject To Fines Or Penalties Or Incur Costs That Could Harm Our Business. We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We contract with third parties for the disposal of these materials and wastes. We will not be able to eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from any use by us of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations. In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions. **We Are At Risk of** Product Liability **And Other Product- Related Claims And** Lawsuits ~~Against Us~~ **, Which** Could Cause Us To Incur Substantial Liabilities And Could Limit Commercialization Of Any Product Candidates That We May Develop. We will face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk **of claims and litigation relating to our products** if **and when** we commercially sell any product candidates that we may develop. **For example, we may be sued, or claims may be made against us, if our informed consents for subjects or patients in any clinical trials are or are alleged to be inadequate or inaccurate in any way or fail to fully inform subjects or patients of any potential risks involved with their participation or other material or required information. We may also be sued, or claims may be made against us, if our product candidates cause or are perceived or alleged to cause injury, or even death, or are found to be otherwise unsuitable during clinical trials, manufacturing, marketing or after sale and use by consumers or when used in conjunction with other medications, even if recommended for such use. Any such product liability claims may include, without limitation, allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, fraud / misrepresentation, inadequate labeling, marketing, or promotional claims or a breach of warranties, among other claims. Claims could also be asserted under state consumer protection laws, common law, or other statutes or regulations.** If we cannot successfully defend ourselves against **product liability** claims **or other claims relating to our products, including without limitation** that our ~~product~~ **products** ~~candidates~~ caused injuries **or death** , we could incur substantial liabilities **or be required to limit commercialization of our product candidates, as well as risk corresponding regulatory enforcement action. Even successful defense would require significant financial and management resources. Even if our agreements with any past or future corporate collaborators entitle us to indemnification in whole or in part against losses, such indemnification may not be available or adequate should any claim arise** . Regardless of merit or eventual outcome, liability claims may result in **, among other things** : • decreased demand **or a decline in price** for any product candidates that we may develop; • injury to our reputation and significant negative media attention; • withdrawal of

clinical trial participants **and inability to enroll future participants** ; • significant costs to defend the related litigation; • substantial monetary awards to trial participants or patients; • **initiation of investigations by regulatory authorities or other regulatory actions or proceedings; •** loss of revenue **; • product recalls, withdrawals or labeling, packaging, marketing or promotional modifications or restrictions; • diversion of management' s time and our resources** ; and • the inability to commercialize any product candidates that we may develop. Although we have obtained product liability insurance coverage, it may not be adequate to cover all liabilities that we may incur. Further, we anticipate that we will need to increase our insurance coverage if we successfully commercialize any product candidate. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise **. We may have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, or under any indemnification agreements with collaborators, and we may not have, or be able to obtain, sufficient capital to pay such amounts** . If We Fail To Establish And Maintain Proper And Effective Internal Control Over Financial Reporting, Our Operating Results And Our Ability To Operate Our Business Could Be Harmed. Ensuring that we have adequate internal financial and accounting controls and procedures in place so that we can produce accurate financial statements on a timely basis is a costly and time- consuming effort that needs to be re- evaluated frequently. We are required to comply with the requirements of The Sarbanes- Oxley Act of 2002, or SOX, which requires that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation, document our controls and perform testing of our key control over financial reporting to allow management and our independent public accounting firm to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of SOX. Our testing, or the subsequent testing by our independent public accounting firm, may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses. If we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock would likely decline and we could be subject to lawsuits, sanctions or investigations by regulatory authorities, which would require additional financial and management resources. We continue to invest in more robust technology and in more resources in order to manage those reporting requirements. Implementing the appropriate changes to our internal controls may distract our officers and employees, result in substantial costs if we implement new processes or modify our existing processes and require significant time to complete. Any difficulties or delays in implementing these controls could impact our ability to timely report our financial results. In addition, we currently rely on a manual process in some areas which increases our exposure to human error or intervention in reporting our financial results. For these reasons, we may encounter difficulties in the timely and accurate reporting of our financial results, which would impact our ability to provide our investors with information in a timely manner. As a result, our investors could lose confidence in our reported financial information, and our stock price could decline. In addition, any such changes do not guarantee that we will be effective in maintaining the adequacy of our internal controls, and any failure to maintain that adequacy could prevent us from accurately reporting our financial results. ~~We~~ **Also, please see," Risk Factors-- Risks Related to Information Security and Data Privacy-- Our Internal Computer Systems, Or Those Of Our Collaborators Or Other Contractors Or Consultants,** May Fail **Or Suffer** To Comply With Evolving European And Other..... of their personal information, reporting security **Security** ~~breaches~~ **Breaches** ~~involving personal data to the competent national data protection authority and affected individuals~~ , ~~appointing data protection officers, conducting data protection impact assessments, and record- keeping. The GDPR increases substantially the penalties to which~~ **Which** ~~we could~~ **Could Result** ~~be subject in the event of any non- compliance, including fines of up to € 10, 000, 000 or up to 2 % of our total worldwide annual turnover for certain comparatively minor offenses, or up to € 20, 000, 000 or up to 4 % of our total worldwide annual turnover for more serious offenses.~~ In **A** ~~particular, national laws of Member States of the EU have implemented national laws which may partially deviate from the GDPR and impose different and more restrictive obligations from country to country, so that we do not expect to operate in a uniform legal landscape in the EU. Also, as it relates to processing and transfer of genetic data, the GDPR specifically allows EU Member State nations to enact laws that impose additional and more specific requirements or restrictions, and European laws have historically differed quite substantially in this field, leading to additional uncertainty. In addition, further to the UK' s exit from the EU on January 31, 2020, the GDPR ceased to apply in the UK at the end of the transition period on December 31, 2020. However, as of January 1, 2021, the UK' s European Union (Withdrawal) Act 2018 incorporated the GDPR (as it existed on December 31, 2020 but subject to certain UK specific amendments) into UK law, referred to as the UK GDPR. The UK GDPR and the UK Data Protection Act 2018 set out the UK' s data protection regime, which is independent from but aligned to the EU' s data protection regime. The UK Government has announced plans to reform its data protection legal framework in its Data Reform Bill but those have been put on hold. Non- compliance with the UK GDPR may result in monetary penalties of up to £ 17. 5 million or 4 % of worldwide revenue, whichever is higher. Although the UK is regarded as a third country under the EU' s GDPR, the European Commission (" EC ") has now issued a decision recognizing the UK as providing adequate protection under the EU GDPR and, therefore, transfers of personal data originating in the EU to the UK remain unrestricted. Like the EU GDPR, the UK GDPR restricts personal data transfers outside the UK to countries not regarded by the UK as providing adequate protection. The UK government has confirmed that personal data transfers from the UK to the EEA remain free flowing. The EU- U. S. and the Swiss- U. S. Privacy Shield frameworks allowed U. S. companies that self- certify to the U. S. Department of Commerce and publicly commit to comply with specified requirements to import personal data from the EU and Switzerland. In 2020, the Court of Justice of the EU ruled that the EU- U. S. Privacy Shield is an invalid transfer mechanism, which was one of the primary mechanisms used by U. S. companies to import personal information from Europe in compliance with the GDPR' s cross- border data transfer restrictions, and raised questions about whether the European Commission' s Standard Contractual Clauses, or SCCs, one of the primary alternatives to the Privacy Shield, can lawfully be used for personal information transfers~~

from Europe to the United States or most other countries. Similarly, the Swiss Federal Data Protection and Information Commissioner has opined that the Swiss- U. S. Privacy Shield is inadequate for transfers of data from Switzerland to the United States and the UK Information Commissioner' s Office has stated that the Privacy Shield framework is inadequate for transfers from the UK to the United States. Furthermore, on June 4, 2021, the European Commission issued new forms of standard contractual clauses for data transfers from controllers or processors in the EEA (or otherwise subject to the GDPR) to controllers or processors established outside the EEA. The new forms of standard contractual clauses have replaced the standard contractual clauses that were adopted previously under the Data Protection Directive. We will be required to transition to the new forms of standard contractual clauses and doing so may require significant effort and cost. The new standard contractual clauses may also impact our business as companies based in Europe may be reluctant to utilize the new clauses to legitimize transfers of personal information to third countries given the burdensome requirements of transfer impact assessments and the substantial obligations that the new standard contractual clauses impose upon exporters. On March 25, 2022, the European Commission and the United States announced to have reached a political agreement on a new " Trans- Atlantic Data Privacy Framework ", which will replace the invalidated Privacy Shield and on December 13, 2022, the European Commission published a draft adequacy decision on the Trans- Atlantic Data Privacy Framework. If we are investigated by a European data protection authority, we may face fines and other penalties. Any such investigation or charges by European data protection authorities could have a negative effect on our existing business and on our ability to attract and retain new clients or pharmaceutical partners. We may also experience hesitancy, reluctance, or refusal by European or multi- national clients or pharmaceutical partners to continue to use our products due to the potential risk exposure as a result of the current (and, in particular, future) data protection obligations imposed on them by certain data protection authorities in interpretation of current law, including the GDPR. Such clients or pharmaceutical partners may also view any alternative approaches to compliance as being too costly, too burdensome, too legally uncertain, or otherwise objectionable and therefore decide not to do business with us. Any of the foregoing could materially -- **Material Disruption Of** harm our business, prospects, financial condition, and results of operations. Our Business And Operations May Be Negatively Impacted By The United Kingdom' s Withdrawal From The EU. On June 23, 2016, the UK held a referendum in which a majority of the eligible members of the electorate voted to leave the EU, commonly referred to as Brexit. The UK formally left the EU on January 31, 2020, however there was an initial transition period until December 31, 2020 during which EU rules and legislation continued to apply. The UK and EU have signed a EU- UK Trade and Cooperation Agreement, or the TCA, which became provisionally applicable on January 1, 2021 and has been formally applicable since May 1, 2021. The TCA includes specific provisions concerning pharmaceuticals, which include the mutual recognition of Good Manufacturing Practice, or GMP, inspections of manufacturing facilities for medicinal products - **Product Development Programs** and GMP documents issued, but does not foresee wholesale mutual recognition of UK and EU pharmaceutical regulations . **"** At present, Great Britain has implemented EU legislation on the marketing, promotion and sale of medicinal products through the Human Medicines Regulations 2012 (as amended) (under the Northern Ireland Protocol, the EU regulatory framework will continue to apply in Northern Ireland). The regulatory regime in Great Britain therefore aligns in many ways with EU regulations, however it is possible that these regimes will more significantly diverge in the future now that Great Britain' s regulatory system is independent from the EU and the TCA does not provide for mutual recognition of UK and EU pharmaceutical legislation. It remains to be seen how Brexit will impact regulatory requirements for medicinal products and devices in the UK in the long- term. Since the expiry of the transition period, Great Britain is no longer covered by centralized marketing authorizations (under the Northern Ireland Protocol, centralized marketing authorizations will continue to be recognized in Northern Ireland). For a period of three years from January 1, 2021, the Medicines and Healthcare products Regulatory Agency, or MHRA, the UK medicines regulator, may rely on a decision taken by the European Commission on the approval of a new marketing authorization in the centralized procedure, in order to more quickly grant a new Great Britain marketing authorization. A separate application will, however, still be required. Any new divergent regulations in Great Britain and the EU could add time and expense to the conduct of our business, as well as the process by which our products receive regulatory approval in the UK, the EU and elsewhere. Any of these longer- term effects of Brexit, and others we cannot anticipate, could negatively impact our business and results of operations. Our UK operations support our current and future operations and clinical activities (including, without limitation, clinical activities for exa- cel) in other countries in the EU and European Economic Area, or EEA, and these operations and clinical activities could be disrupted by the longer term effects of Brexit. Our Business Operations Have a Substantial International Footprint and We May Further Expand In The Future, Which Presents Challenges In Managing Our Business Operations. We are headquartered in Zug, Switzerland and have offices in the United States and the United Kingdom . In addition, we may expand our international operations into other countries in the future. While we have acquired significant management and other personnel with substantial experience, conducting our business in multiple countries subjects us to a variety of risks and complexities that may materially and adversely affect our business, results of operations, financial condition and growth prospects, including, among other things: • the increased complexity and costs inherent in managing international operations; • diverse regulatory, financial and legal requirements, and any future changes to such requirements, in one or more countries where we are located or do business; • country- specific tax, labor and employment laws and regulations; • challenges inherent in efficiently managing employees in diverse geographies, including the need to adapt systems, policies, benefits and compliance programs to differing labor and other regulations; • liabilities for activities of, or related to, our international operations or product candidates; • changes in currency rates; and • regulations relating to data security and the unauthorized use of, or access to, commercial and personal information. We continue to expand our operations, and our corporate structure and tax structure is complex. In connection with our current and future potential partnerships, we are actively engaged in developing and applying technologies and intellectual property with a view toward commercialization of products globally, often with commercialization partners. In connection with those activities, we already have and will likely continue to engage in complex cross- border and global transactions involving our technology,

intellectual property and other assets, between us and other entities such as partners and licensees, and between us and our subsidiaries. Such cross- border and global arrangements are both difficult to manage and can potentially give rise to complexities in areas such as tax treatment, particularly since we are subject to multiple tax regimes and different tax authorities can also take different views from each other, even as regards the same cross- border transaction or arrangement. There can be no assurance that we will effectively manage this increased complexity without experiencing operating inefficiencies, control deficiencies or tax liabilities. Significant management time and effort is required to effectively manage the increased complexity of our company, and our failure to successfully do so could have a material adverse effect on our business, financial condition, results of operations and growth prospects. **Risks Related to Intellectual Property** If We Are Unable To Obtain Or Protect Intellectual Property Rights Related to Our Proprietary Gene Editing Technology And Product Candidates, We May Not Be Able To Compete Effectively In Our Markets. Our success depends in large part on our ability to obtain and maintain proprietary or intellectual property protection in the United States and other jurisdictions with respect to our CRISPR / Cas9 platform technology and any proprietary product candidates and technology we develop. We rely upon a combination of intellectual property rights, including patent rights, trade secret protection and confidentiality agreements to protect the intellectual property related to our gene editing technology and product candidates. Presently we have rights to certain intellectual property, through licenses from third parties and under patent rights that we own, to develop our gene editing technology and / or product candidates. For example, through our 2014 exclusive license with Dr. Charpentier, we exclusively license certain rights to a worldwide patent portfolio, including more than **one hundred** ~~ninety- five~~ (~~95~~ **100**) granted or allowed patents, as well as pending patent applications, which covers various aspects of our gene editing platform technology, including, for example, compositions of matter (e. g., CRISPR / Cas9 systems), and methods of use, including the use of a CRISPR / Cas9 system for gene editing. We refer to this worldwide patent portfolio as the " Patent Portfolio ". In addition, we have filed numerous patent applications covering our product candidates, which cover various aspects of our product candidates, including, for example, compositions of matter, as well as methods of making and using. We seek to protect our proprietary position by in- licensing intellectual property to cover our platform technology and filing patent applications in the United States and in other jurisdictions related to our technologies and product candidates that are important to our business. We also rely on trade secrets, know- how and continuing technological innovation to develop and maintain our proprietary and intellectual property position. If we or our licensors are unable to obtain or maintain patent protection with respect to our CRISPR / Cas9 platform technology and any proprietary products and technology we develop, our business, financial condition, results of operations and prospects could be materially harmed. However, the strength of patents in the biotechnology and pharmaceutical field generally, and the genome- editing field in particular, involves complex legal and scientific questions and can be uncertain and we cannot offer any assurances about which, if any, patent rights that we own or in- license will issue, the breadth of any such patent rights or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. For example, the scope of patent protection that will be available to us in the United States and in other countries is uncertain. Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our intellectual property, obtain, maintain, defend and enforce our intellectual property rights and, more generally, could affect the value of our intellectual property or narrow the scope of our owned and in- licensed patents. With respect to both in- licensed and owned intellectual property, we cannot predict whether the patent applications we and our licensors are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient protection from competitors, or if any such patents will be found invalid, unenforceable or not infringed if challenged by our competitors. The patent prosecution process is expensive, time- consuming, and complex, and we may not be able to file, prosecute, maintain, enforce, or license all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output in time to obtain patent protection. Although we enter into non- disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants advisors, and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. In addition, numerous U. S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing our gene editing technology and / or product candidates. It is possible that we have failed to identify relevant third- party patents or applications. Furthermore, publications of discoveries in the scientific literature often lag behind the actual discoveries and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot know with any degree of certainty whether the inventors of our licensed patents and applications were the first to make the inventions claimed in our owned or any licensed patents or pending patent applications, or that we were the first to file for patent protection of such inventions. Moreover, there is no assurance that all of the potentially relevant prior art relating to our owned and in- licensed patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a pending patent application. The ultimate outcome of any pending or allowed patent application or granted patent is uncertain and the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Even if patent applications we license or own currently in the future issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Additionally, the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability and our owned and in- licensed patents may be challenged in the courts or patent offices in the United States and in other jurisdictions. There is a substantial amount of litigation as well as administrative proceedings for challenging patents, including interference, derivation, reexamination, and other post- grant proceedings before the USPTO and oppositions and other comparable proceedings in foreign jurisdictions, involving patents and other intellectual property rights in the

biotechnology and pharmaceutical industries, and we expect this to be true for the CRISPR / Cas9 space as well. See " Risk Factors — Risks Related to Intellectual Property — Third- party Claims Of Intellectual Property Infringement Against Us, Our Licensors Or Our Collaborators May Prevent Or Delay Our Product Discovery and Development Efforts " for more information. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, revoked, invalidated or held unenforceable, in whole or in part, which could limit our ability to practice the invention or stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and in- licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours. Competitors may also claim that they invented the inventions claimed in such issued patents or patent applications prior to our inventors, or may have filed patent applications before our inventors did. A competitor may also claim that our products and technology infringe its patents and that we therefore cannot practice our technology as claimed under our patent applications, if issued. An adverse determination in any such claim may result in our inability to manufacture or commercialize products without infringing third- party patent rights. Competitors may also contest our patents, if issued, by showing that the invention was not patent- eligible, was not novel, was obvious or that the patent claims failed any other requirement for patentability. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights or allow third parties to commercialize our technology or products and compete directly with us, without payment to us. Moreover, we, or one of our licensors, may have to participate in additional interference proceedings declared by the USPTO to determine priority of invention or in post- grant challenge proceedings, such as oppositions in a non- U. S. patent office, that challenge priority of invention or other features of patentability. Such challenges may result in loss of patent rights, loss of exclusivity or freedom to operate, or in patent claims being narrowed, revoked, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us. Further, even if they are unchallenged, our owned and in- licensed patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates or prevent others from designing around our claims. If the breadth or strength of protection provided by the patent applications we hold is threatened, this could dissuade companies from collaborating with us to develop, and could threaten our ability to commercialize, product candidates. Consequently, we do not know whether any of our genome- editing platform advances and product candidates will be protectable or remain protected by valid and enforceable patents. Our competitors or other third parties may be able to circumvent our patents by developing similar or alternative technologies or products in a non- infringing manner. For example, we are aware that third parties have suggested the use of the CRISPR technology in conjunction with a protein other than Cas9. Our owned and in- licensed patents may not cover such technology. If our competitors commercialize the CRISPR technology in conjunction with a protein other than Cas9, our business, financial condition, results of operations, and prospects could be materially adversely affected. Further, if we encounter delays in our clinical trials, the period of time during which we could market product candidates under patent protection would be reduced. Because our gene editing technology and product candidates could require the use of proprietary rights held by third parties, the growth of our business could depend in part on our ability to acquire, in- license, or use these proprietary rights. We may be unable to acquire or in- license such intellectual property rights from third parties that we identify. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third- party intellectual property rights on terms that would allow us to make an appropriate return on our investment. Furthermore, as industry, government, academia and other biotechnology and pharmaceutical research expands and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others. We cannot guarantee that our gene editing technology, product candidates or the use of such product candidates do not infringe third- party patents. Because patent rights are granted jurisdiction- by- jurisdiction, our freedom to practice certain technologies, including our ability to research, develop and commercialize our product candidates, may differ by country. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business. Our pending and future patent applications or the patent applications that we obtain rights to through in- licensing arrangements may not result in patents being issued which protect our technology or future product candidates, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know- how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our product candidate discovery and development processes that involve proprietary know- how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. Although we expect all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know- how, information or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise

gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA' s disclosure policies may change in the future, if at all. Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent material disclosure of the non- patented intellectual property related to our technologies to third parties, and there is no guarantee that we will have any such enforceable trade secret protection, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business **. Third- party Claims Of Intellectual Property Infringement Against Us, Our Licensors Or Our Collaborators May Prevent Or Delay Our Product Discovery and Development Efforts**. Our commercial success depends in part on our avoiding infringement of the valid patents and proprietary rights of third parties. Numerous U. S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing our product candidates. As industry, government, academia and other biotechnology and pharmaceutical research expands and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others. We cannot guarantee that our technology, future product candidates or the use of such product candidates do not infringe third- party patents. It is also possible that we have failed to identify relevant third- party patents or applications. Because patent rights are granted jurisdiction- by- jurisdiction, our freedom to practice certain technologies, including our ability to research, develop and commercialize our product candidates, may differ by country. Third parties may assert that we infringe their patents or that we are otherwise employing their proprietary technology without authorization, and may sue us. There may be third- party patents of which we are currently unaware with claims to compositions, formulations, methods of manufacture or methods of use or treatment that cover product candidates we discover and develop. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies or the manufacture, use or sale of our product candidates infringes upon these patents. If any such third- party patents were held by a court of competent jurisdiction to cover our technologies or product candidates, the holders of any such patents may be able to block our ability to commercialize the applicable product candidate unless we obtain a license under the applicable patents, or until such patents expire or are finally determined to be held invalid or unenforceable. Such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third- party patent on commercially reasonable terms, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business. Third- party Claims Of Intellectual Property May Prevent Or Delay Our Product Discovery and Development Efforts. Third parties may seek to claim intellectual property rights that encompass or overlap with intellectual property that we own or license from them or others. Legal proceedings may be initiated to determine the scope and ownership of these rights, and could result in our loss of rights, including injunctions or other equitable relief that could effectively block our ability to further develop and commercialize our product candidates. Interference or derivation proceedings provoked by third parties or brought by the USPTO may be necessary to determine the priority of inventions with respect to, or the correct inventorship of, our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Litigation, interference or derivation proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees. For example, third parties could assert that we do not have rights to certain CRISPR / Cas9 technologies, or could assert and have asserted in the past, that the CVC Group does not have rights to certain CRISPR / Cas9 technologies, including inventorship and ownership rights to some of the CVC Group' s patents, or that such rights are limited. Specifically, the Broad Institute and Massachusetts Institute of Technology and, in some instances, the President and Fellows of Harvard College, which we refer to individually and collectively as the " Broad " owns a patent family that includes issued patents in the United States and Europe that claim certain aspects of CRISPR / Cas9 systems to edit DNA in eukaryotic cells, including human cells. In January 2016, the USPTO declared an interference (Interference No. 106, 048, or ' 048 interference) between one of the then pending U. S. patent applications (now issued as U. S. Patent No. 10, 266, 850) included in the Patent Portfolio and twelve issued U. S. patents owned jointly by the Broad to determine which set of inventors invented first and, thus, is entitled to patents on the invention in the United States. The PTAB concluded that the declared interference should be discontinued because the involved claim sets were considered patentably distinct from each other. Following appeal by the CVC Group, on September 10, 2018, the Federal Circuit affirmed the PTAB' s decision to terminate the interference proceeding without determining which inventors actually invented the use of the CRISPR / Cas9 genome editing technology in eukaryotic cells. Further, in June 2019, the USPTO declared a second interference (Interference No. 106, 115, or ' 115 interference) between fourteen (14) pending U. S. patent applications co- owned by the CVC Group and thirteen (13) patents and a patent application co- owned by the Broad. The Broad patents include those that were the subject of the ' 048 interference. In September 2020, the PTAB issued an order that, among other matters, advanced the proceeding to the priority phase. In February 2022, PTAB issued a Decision of Priority and Judgment finding that Broad has priority over CVC Group with respect to the subject matter of the interference. The CVC Group has appealed this decision to the Federal Circuit. Any final decision by the Federal Circuit can be further appealed to the

Supreme Court. In addition to the Broad, other third parties, such as Vilnius University, ToolGen, Inc., MilliporeSigma (a subsidiary of Merck KGaA and formerly known as " Sigma- Aldrich ") and Harvard University, filed patent applications claiming CRISPR / Cas9- related inventions around or within a year after the CVC Group application was filed and allege (or may allege) that they invented one or more of the inventions claimed by the CVC Group before the CVC Group. If the USPTO deems the scope of the claims of one or more of these parties to sufficiently overlap with the allowable claims from the CVC Group application, the USPTO could declare other interference proceedings to determine the actual inventor of such claims. For example, in December 2020, the USPTO declared an interference (Interference No. 106, 127, or ' 127 interference) between a ToolGen patent application that claims certain aspects of CRISPR / Cas9 systems to edit DNA in eukaryotic cells, including human cells, and the same fourteen pending U. S. patent applications co- owned by the CVC Group that are involved in the ' 115 interference. This interference has been stayed pending a decision by the Federal Circuit in the ' 115 interference. The PTAB' s judgment may be appealed to the Federal Circuit, and thru to the Supreme Court. In addition, in June 2021, the USPTO declared an interference (Interference No. 106, 132, or ' 132 interference) between a MilliporeSigma patent application that claims certain aspects of CRISPR / Cas9 systems to edit DNA in eukaryotic cells, including human cells, and the same fourteen pending U. S. patent applications co- owned by the CVC Group that are involved in the ' 115 interference. This interference has been stayed pending a decision by the Federal Circuit in the ' 115 interference. Ultimately, the PTAB' s judgment may be appealed to the Federal Circuit, and thru to the Supreme Court. Each of the CVC Group, the Broad, ToolGen, Vilnius University, MilliporeSigma and Harvard University can pursue existing or new patent applications in the United States and elsewhere. Because the CVC Group and these other third parties all allege owning intellectual property claiming overlapping aspects of CRISPR / Cas9 systems and methods to edit DNA in eukaryotic cells, including human cells, our ability to market and sell CRISPR / Cas9- based human therapeutics may be adversely impacted depending on the scope and actual ownership over the inventions claimed in the competing patent portfolios. Going forward, the USPTO could declare new interferences with the CVC Group, or us individually, related to the uses of the CRISPR / Cas9 technologies. Furthermore, we and the CVC Group continue to prosecute other patent claims covering the CRISPR / Cas9 inventions, which could also result in allowable or issued patents in the United States. Certain of the claims being prosecuted by the CVC Group and us, if found allowable by the USPTO, could lead to interference proceedings against patents or patent applications owned by third parties, including those listed above. If the USPTO deems the scope of the claims of one or more of these parties to sufficiently overlap with the allowable claims from a patent or patent application within the Patent Portfolio or our portfolio of patents, the USPTO could declare other interference proceedings to determine the first inventor of such claims. We cannot be certain which of these results, if any, will actually occur. If there are additional interferences, either party to the interference could again appeal an adverse decision to the Federal Circuit. Additionally, any of the CVC Group' s existing or new patents or our existing or new patents could be the subject of other challenges to their validity or enforceability. The effects that any such results may have on us and our intellectual property position are currently unknown. If any third party were to succeed in its interference and prevail in their inventorship claims or obtain patent claims that cover our product candidates or related activities through these various legal proceedings, such party could seek to assert its issued patents against us based on our CRISPR / Cas9- based activities, including commercialization. Third parties asserting their patent rights against us may seek and obtain injunctive or other equitable relief, which could effectively limit or block our ability to further develop and commercialize our product candidates. If we are found to infringe a third party' s valid intellectual property rights, we could be required to obtain a license from such third party to continue developing and marketing our products and technology, or avoid or invalidate such third party' s intellectual property. These third parties would be under no obligation to grant to us any such license and such licenses may not be available on commercially reasonable terms or at all, or may be non- exclusive. If we are unable to obtain and maintain such licenses, we and our partners may need to cease the practice of our core gene editing, and the development, manufacture, and commercialization of one or more of the product candidates we may develop. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing one or more of our product candidates, force us to redesign our infringing products or force us to cease some or all of our business operations, any of which could materially harm our business and could prevent us from further developing and commercializing our proposed future product candidates thereby causing us significant harm. The loss of exclusivity or the narrowing of our patent claims could limit our ability to stop others from using or commercializing similar or identical technology and products. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business. Any of the foregoing could result in a material adverse effect on our business, financial condition, results of operations, or prospects. Defense of these claims, regardless of their merit, would involve substantial litigation expense, would be a substantial diversion of management and other employee resources from our business and may impact our reputation. In any case, it may be years before there is a final determination on priority. Pursuant to the terms of the license agreement with Dr. Charpentier, we are responsible for covering or reimbursing Dr. Charpentier' s patent prosecution, defense and related costs associated with our in- licensed technology. Third- party owned IP relating to CRISPR / Cas9 or other related technologies necessary to develop, manufacture and commercialize viable CRISPR / Cas9 therapeutics – such as compositions of the products or components, methods of treatment, delivery technologies, chemical modifications, and analytical and manufacturing methods – could adversely impact our ability to ultimately market and sell products. Third parties may own intellectual property, including patents, that cover all or aspects of our technologies and potential products, and may be necessary for us to develop or commercialize viable products. If we are unable to successfully license, avoid or challenge such third- party intellectual property, we may not be able to develop and commercialize viable products in all or certain jurisdictions. In addition, if the intellectual property covering our products or technologies that we own or license were to be legally impaired or lost, we may be unable to realize sufficient financial returns to support the development or commercialization of our products. Further, third parties routinely file international counterparts

of their U. S. applications, some of which have been granted or could in the future be granted in Europe and / or other non- U. S. jurisdictions. We, as well as other parties have initiated opposition proceedings against some of these grants, and we may in the future oppose other grants to these or other applicants. Similarly, our intellectual property is and may in the future become involved in opposition proceedings in Europe or other jurisdictions **, such as, for example, in Australia, Japan, China, and India** . These oppositions could lead to the revocation of the patents in whole or in part, or could lead to the claims being narrowed in a way that could impair or preclude our ability to enforce the patents against competitors in Europe. For example, in February 2018, several parties filed oppositions in the European Patent Office to the grant of our first in- licensed European patent. Later in 2018 and in 2019, several parties filed oppositions in the European Patent Office to the grant of both our second and third in- licensed European patents. Opposition proceedings can lead to the revocation of a patent in its entirety; the maintenance of the patent as granted, or the maintenance of a patent in amended form. Opposition proceedings typically take years to resolve, including the time taken by appeals that can be filed by any of the parties. We cannot guarantee the outcome of the oppositions to our in- licensed European patent, and an adverse result could preclude us from enforcing our rights in Europe against third parties. For example, in early 2020, the European Patent Office upheld our first in- licensed European patent in amended form; in late 2021, they revoked our second European patent ~~,~~**;** and **in 2022,** the **European Patent Office upheld our third European patent in amended form. The** ~~decision~~ **decisions on the first and third European patents have been appealed and the appeal** is pending ~~appeal~~ . We are unable to predict the outcome of these matters and are unable to make a meaningful estimate of the amount or range of loss, if any, that could result from an unfavorable outcome. In the future, we may become party to legal matters and claims arising in the ordinary course of business, the resolution of which we do not anticipate would have a material adverse impact on our financial position, results of operations or cash flows. Our Rights To Develop And Commercialize Our Technology And Product Candidates Are Subject, In Part, To The Terms And Conditions Of Licenses Granted To Us By Others. We are reliant upon licenses to certain intellectual property from third parties that are important or necessary to the development of our gene editing technology and product candidates. These and other licenses may not provide exclusive rights to use such intellectual property and technology in all relevant fields of use or cover all territories in which we may wish to develop or commercialize our technology and products in the future. As a result, we may not be able to prevent competitors from developing and commercializing competitive products in territories included in all of our licenses. Moreover, under our in- license agreements, including our 2014 exclusive license agreement with Dr. Charpentier, we will be required to pay royalties based on our revenues from sales of our products utilizing the licensed technologies and these royalty payments could adversely affect the overall profitability for us of any products that we may seek to commercialize. Under each of our in-license agreements with Dr. Charpentier, we have an obligation to use commercially reasonable efforts to develop and obtain regulatory approval to market a licensed therapeutic product. Our in- license agreements with Dr. Charpentier also include an obligation to file an IND (or its equivalent in a major market country) by April 2021 and an obligation to file an IND (or its equivalent in a major market country) by April 2024. While we met the obligation to file an IND by April 2021, we may not be successful in meeting other remaining obligations in the future on a timely basis or at all. Our failure to meet the remaining obligations may give Dr. Charpentier the right to terminate our license rights. We will need to outsource and rely on third parties for many aspects of the clinical development of the products covered under our license agreements. Delay or failure by these third parties could adversely affect our ability to meet our diligence obligations and the continuation of our license agreements with third- party licensors. In spite of our best efforts, our licensors might conclude that we have materially breached our license agreements and might therefore terminate the license agreements, thereby removing our ability to develop and commercialize products and technology covered by these license agreements. If these in - licenses are terminated, or if the underlying patents fail to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products identical to ours. In addition, we may seek to obtain additional licenses from our licensors and, in connection with obtaining such licenses, we may agree to amend our existing licenses in a manner that may be more favorable to the licensors, including by agreeing to terms that could enable third parties (potentially including our competitors) to receive licenses to a portion of the intellectual property that is subject to our existing licenses. Any of these events could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects. The Intellectual Property That Protects Our Core Gene Editing Technology Is Jointly Owned, And Our License Is From Only One Of The Joint Owners, Materially Limiting Our Rights In The United States And In Other Jurisdictions. The Patent Portfolio we have exclusively licensed from Dr. Charpentier is the core patent protection for our gene editing technology. However, that family includes other named inventors who assigned their rights either to California or Vienna. As such, the Patent Portfolio is currently co- owned by Dr. Charpentier, California, and Vienna. On December 15, 2016, we entered into a Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement, or IMA, with California, Vienna and their licensees including Caribou and Caribou' s licensee Intellia Therapeutics. Under the IMA, the co- owners provided reciprocal worldwide cross-consents to each of the other co- owners' licensees and sublicensees, and agreed to a number of other commitments and obligations with respect to supporting and managing the underlying CRISPR / Cas9 gene editing intellectual property, including a cost- sharing agreement. As explained more fully below, that leaves us in a position of holding only non- exclusive or co-exclusive rights to the patent rights that protect our core gene editing technology, and we must continue to satisfy our contractual obligations under the IMA in order to maintain the effectiveness of the consents by California and Vienna to our license from Dr. Charpentier. In the United States, each co- owner has the freedom to license and exploit the technology. As a result, we do not have exclusive access to any intellectual property rights that Dr. Charpentier co- owns with another entity, such as California and Vienna. Our license with Dr. Charpentier is therefore non- exclusive with respect to such co- owned rights. Furthermore, in the United States each co- owner is required to be joined as a party to any claim or action we may wish to bring to enforce those patent rights. Moreover, in the United States, non- exclusive licenses have no standing to bring a patent infringement action before a court. Therefore, for the patents owned with California and Vienna we have no ability to pursue third- party

infringement claims without cooperation of California and Vienna and potentially their licensees. Although we have entered into the IMA with Vienna and California and their licensees, which provides for, among other things, notice of and coordination in the event of third- party infringement of the patent rights within the Patent Portfolio, there can be no assurance that Vienna and California will cooperate with us in any future infringement. If we are unable to enforce our core patent rights licensed from Dr. Charpentier, we may be unable to prevent third parties from competing with us and may be unable to persuade companies to sublicense our technology, either of which could have a material adverse effect on our business. We May Experience Disputes With The Third Parties That We In- license Intellectual Property Rights From Or Those We License Intellectual Property To. Any Disputes With These Parties Could Adversely Affect Our Business And We Could Lose License Rights That Are Important To Our Business. We license the intellectual property that covers our gene editing technology from a third party, and we expect to continue to in- license additional third- party intellectual property rights as we expand our gene editing technology. Disputes may arise with the third parties from whom we license our intellectual property rights from for a variety of reasons, including: • the scope of rights granted under the license agreement and other interpretation- related issues; • the extent to which our technology and processes infringe on, or derive from, intellectual property of the licensor that is not subject to the licensing agreement; • the sublicensing of patent and other rights under our collaborative development relationships and obligations associated with sublicensing; • our diligence obligations under the license agreement and what activities satisfy those diligence obligations; • the inventorship and ownership of inventions and know- how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and • the priority of invention of patented technology. In addition, the agreements under which we currently license intellectual property or technology from third parties, or maintain consents under the IMA, are complex, and certain provisions in such agreements may be susceptible to multiple interpretations, or may conflict in such a way that puts us in breach of one or more agreements, which would make us susceptible to lengthy and expensive disputes with one or more of our licensing partners or the parties to the IMA. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates, which could have a material adverse effect on our business, financial conditions, results of operations, and prospects. Similarly, as we continue to enter into license agreements, collaboration agreements and partnerships with third- parties to expand our development programs, we have, and expect to continue to, out- license some of our intellectual property to these third- parties. Disputes may arise with these third parties to whom we out- license our intellectual property rights for a variety of reasons, including, the scope of rights granted under any such agreement and other interpretation- related issues. Any disputes with our current or future collaboration partners or licensees regarding the scope of intellectual property rights granted to such partner or licensee by us could result in the delay of development programs and would make us susceptible to lengthy and expensive disputes with our partners or licensees. We May Not Be Successful In Obtaining Or Maintaining Necessary Rights To Any Product Candidates or Other Technologies We May Develop Through Acquisitions And In- Licenses. We currently have rights to intellectual property, through in- licenses from third parties, to identify and develop product candidates, as well as use other technologies. Many pharmaceutical companies, biotechnology companies, and academic institutions are competing with us in the field of gene editing technology and filing patent applications potentially relevant to our business. For example, we are aware of several third- party patent applications that, if issued, may be construed to cover our gene editing technology and product candidates. In order to avoid infringing these third- party patents, we may find it necessary or prudent to obtain licenses from such third- party intellectual property holders. We may also require licenses from third parties for certain modified or improved components of gene editing technology, such as modified nucleic acids **or proteins** , as well as non- CRISPR / Cas9 technologies such as delivery methods that we are evaluating for use with product candidates we may develop. In addition, with respect to any patents we co- own with third parties, we may require licenses to such co- owners' interest to such patents. However, we may be unable to secure such licenses or otherwise acquire or in- license any compositions, methods of use, processes, or other intellectual property rights from third parties that we identify as necessary for product candidates we may develop and gene editing technology. The licensing or acquisition of third- party intellectual property rights is a competitive area, and companies that may be more established, or have greater resources than we do may be pursuing strategies to license or acquire third- party intellectual property rights that we may consider attractive or necessary. More established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates or technology that we may seek to acquire. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant program, technology, or product candidate, or discontinue the practice of our core CRISPR / Cas9 gene editing technology, which could have a material adverse effect on our business, financial condition, results of operations, and prospects. Issued Patents Covering Our Technology And Product Candidates Could Be Found Invalid Or Unenforceable If Challenged In Court or before the USPTO or comparable foreign authority. If we or one of our licensors initiated legal proceedings against a third party to enforce a patent covering a product candidate we may develop or our technology, including CRISPR / Cas9, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could

be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, or non- enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties have raised challenges to the validity of certain of our in- licensed patent applications, such as our in- licensed CRISPR / Cas9 patent applications in the context of third- party observations and oppositions filed **, for example,** in Europe ~~and ,~~ Australia **, Japan, China and India, and in the U. S. interferences** , and may in the future raise similar claims related to our in- licensed and owned patent applications and patents before administrative bodies in the United States or in other jurisdictions, even outside the context of litigation. Mechanisms for challenging the validity of patents in patent offices include re- examination, post- grant review, inter partes review, interference proceedings, derivation proceedings, and equivalent proceedings in non- U. S. jurisdictions (e. g., opposition proceedings). Such proceedings could – after exhausting available appeals – result in the loss of our patent applications or patents, or their narrowing in such a way that they no longer cover our technology or platform, or any product candidates that we may develop. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art. If a third party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our technology or platform, or any product candidates that we may develop. Such a loss of patent protection would have a material adverse impact on our business, financial condition, results of operations, and prospects. The Intellectual Property Landscape Around Gene Editing Technology, Including CRISPR / Cas9, Is Highly Dynamic, And Third Parties May Initiate And Prevail In Legal Proceedings Alleging That The Patents That We In- License Or Own Are Invalid Or That We Are Infringing, Misappropriating, Or Otherwise Violating Their Intellectual Property Rights, The Outcome Of Which Would Be Uncertain And Could Have A Material Adverse Effect On The Success Of Our Business. The field of gene editing, especially in the area of gene editing technology, is still in its infancy ~~, and no such products have reached the market~~ . Due to the intense research and development that is taking place by several companies, including us and our competitors, in this field, the intellectual property landscape is in flux, and it may remain uncertain for the coming years. There may be significant intellectual property related litigation and proceedings relating to our owned and in- licensed, and other third party, intellectual property and proprietary rights in the future. Our commercial success depends upon our ability and the ability of our collaborators to develop, manufacture, market, and sell any product candidates that we may develop and use our proprietary technologies without infringing, misappropriating, or otherwise violating the intellectual property and proprietary rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. We are subject to and may in the future become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our technology and any product candidates we may develop, including re- examination interference proceedings, post- grant review, inter partes review, and derivation proceedings before the USPTO and similar proceedings in other jurisdictions such as oppositions before the European Patent Office. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit. If we are unable to prove that these patents are invalid and we are not able to obtain or maintain a license on commercially reasonable terms, such patents could have a material adverse effect on the conduct of our business. If we are found to infringe such third- party patents, we and our partners may be required to pay damages, cease commercialization of the infringing technology, including our core CRISPR / Cas9 gene editing technology, or obtain a license from such third parties, which may not be available on commercially reasonable terms or at all. Even if we believe third- party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, ownership, or priority. A court of competent jurisdiction could hold that these third- party patents are valid, enforceable, and infringed, which could materially and adversely affect our ability to commercialize any product candidates we may develop and any other product candidates or technologies covered by the asserted third- party patents. In order to successfully challenge the validity of any such U. S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U. S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U. S. patent. If we are found to infringe a third party' s intellectual property rights, and we are unsuccessful in demonstrating that such patents are invalid or unenforceable, we could be required to obtain a license from such third party to continue developing, manufacturing, and marketing any product candidates we may develop and our technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non- exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. We also could be forced, including by court order, to cease developing, manufacturing, and commercializing the infringing technology or product candidates. In addition, we could be found liable for significant monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent or other intellectual property right. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on our business, financial condition, results of operations, and prospects. Intellectual Property Litigation Could Cause Us To Spend Substantial Resources And Distract Our Personnel From Their Normal Responsibilities. Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time- consuming and is likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities and generally harm our business. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation in certain countries, including the United States, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to

be negative, it could have a substantial adverse effect on the price of our common shares. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing or misappropriating or successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. Some Intellectual Property Which We Have In- licensed May Have Been Discovered Through Government Funded Programs And Thus May Be Subject To Federal Regulations Such As " march- in " Rights, Certain Reporting Requirements And A Preference For U. S.- based Manufacturers. Compliance With Such Regulations May Limit Our Exclusive Rights, And Limit Our Ability To Contract With Non- U. S. Manufacturers. The intellectual property rights to which we have in- licensed under Dr. Charpentier' s joint interest are co- owned by California, which has indicated that one or more of the inventions were made under Grant No. GM081879 awarded by the National Institute of Health. These rights are therefore subject to certain federal regulations. The U. S. government has certain rights pursuant to the Bayh- Dole Act of 1980, or Bayh-Dole Act, to patents covering government rights in certain inventions developed under a government- funded program. These rights include a non- exclusive, non- transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U. S. government has the right to require us to grant exclusive, partially exclusive, or non- exclusive licenses to any of these inventions to a third party if it determines that: (i) adequate steps have not been taken to ~~commercialize~~ **achieve practical application of** the invention **in the field of use** ; (ii) government action is necessary to meet public health or safety needs; or (iii) government action is necessary to meet requirements for public use under federal regulations, also referred to as " march- in rights. " The U. S. government also has the right to take title to these inventions if we, or the applicable contractor, fail to disclose the invention to the government and fail to file an application to register the intellectual property within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us or the applicable contractor to expend substantial resources. In addition, the U. S. government requires that any products embodying the subject invention or produced through the use of the subject invention be manufactured substantially in the United States. The manufacturing preference requirement can be waived if the owner of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible. This preference for U. S. manufacturers may limit our ability to contract with non- U. S. product manufacturers for products covered by such intellectual property. To the extent any of our current or future patents covering inventions is generated through the use of U. S. government funding, the provisions of the Bayh- Dole Act may similarly apply. We May Not Be Able To Protect Our Intellectual Property And Proprietary Rights Throughout The World. Filing, prosecuting and defending patents on our product candidates in all countries throughout the world would be prohibitively expensive. The requirements for patentability may differ in certain countries, particularly in developing countries. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in intellectual property laws various jurisdictions worldwide. Additionally, the patent laws of some countries do not afford intellectual property protection to the same extent as the laws of the United States. For example, unlike patent law in the United States, the patent law in Europe and many other jurisdictions precludes the patentability of methods of treatment of the human body and imposes substantial restrictions on the scope of claims it will grant if broader than specifically disclosed embodiments. Many companies have encountered significant problems in protecting and defending intellectual property rights in various jurisdictions globally. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not pursued and obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection but enforcement is not as strong as that in the United States. These products may compete with our product candidates, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our intellectual property and proprietary rights in various jurisdictions globally could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license. Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected. Patent protection must ultimately be sought on a country- by- country basis, which is an expensive and time- consuming process with uncertain outcomes. Accordingly, we may choose not to seek patent protection in certain countries, and we will not have the benefit of patent protection in such

countries. Changes To The Patent Law In The United States And Other Jurisdictions Could Diminish The Value Of Patents In General, Thereby Impairing Our Ability To Protect Our Product Candidates. **Our success, like** ~~As is the case with~~ other ~~biopharmaceutical~~ companies **in the biotech and pharmaceutical sectors** , **relies** ~~our success is~~ heavily ~~dependent~~ on intellectual property, **especially patents. Patent acquisition and enforcement in our industry are complex, expensive, and uncertain due to technical and legal intricacies. Changes in patent laws or their interpretation can exacerbate these uncertainties and increase costs,** particularly **with** ~~patents. Obtaining and enforcing patents in~~ the **shift** ~~biopharmaceutical industry involves both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Recent patent reform legislation~~ in the United States ~~and~~ **from a" first to invent" to a" first- to- file" patent system since March 2013. This change means that** ~~other -- the countries~~ **first applicant** , ~~including~~ **not necessarily** the **first inventor, can secure a patent. As patent applications are confidential initially, it is uncertain whether we were the first to file or invent our technology. The** Leahy- Smith America Invents Act **introduced** ~~, or Leahy- Smith Act, signed into law on September 16, 2011, could increase those uncertainties and costs. The Leahy- Smith Act includes a number of~~ significant changes ~~to U. S.~~ **, including a lower burden of proving** patent ~~law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost- effective avenues for competitors to challenge the validity~~ **invalidity in USPTO proceedings compared** ~~of patents. In addition, the Leahy- Smith Act has transformed the U. S. patent system into a " first~~ to **federal courts** ~~file " system. The first- to- file provisions~~ , **which** ~~however, only became effective on March 16, 2013. Accordingly, it is not yet clear what, if any, impact the Leahy- Smith Act will have on the operation of our business. However, the Leahy- Smith Act and its implementation~~ could make it **easier** ~~more difficult to obtain patent protection~~ for **third parties to challenge** ~~our inventions and increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or~~ **our** ~~defense of our issued~~ patents ~~, all of which could harm our business, results of operations and financial condition~~ . ~~The~~ **Recent decisions from the** U. S. Supreme Court ~~has ruled on several~~ **and U. S. Court of Appeals for the Federal Circuit have also narrowed** patent ~~cases in recent years, either narrowing the scope of patent protection~~ **protections and weakened** ~~available in certain circumstances or weakening the rights of~~ patent owners ~~in~~ **' rights, creating** ~~certain~~ **uncertainty about** ~~situations. For example, in Association for Molecular Pathology v. Myriad Genetics, Inc., the Supreme Court ruled that a " naturally occurring DNA segment is a product of nature and not~~ patent **validity** ~~eligible merely because it has been isolated, " and invalidated Myriad Genetics' claims on the isolated BRCA1 and BRCA2 genes. Certain claims of our patents relate to CRISPR / Cas9 gene editing technology as well as guide components that are directed to naturally occurring DNA sequences. To the extent that such claims are deemed to be directed to natural products, or to lack an~~ **and enforceability** ~~inventive concept above and beyond an isolated natural product, a court may decide the claims are invalid under Myriad~~ . **These** ~~Additionally, there have been recent proposals for additional~~ changes ~~to the patent laws of the United States and other countries that~~ , ~~if adopted~~ **along with potential future legal developments** , could ~~impact~~ **weaken** our ability to **secure** ~~obtain patent protection for our proprietary technology or our ability to enforce our proprietary technology. Depending on future actions by the U. S. Congress, the U. S. courts, the USPTO and the relevant law- making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain~~ new patents or ~~to~~ enforce ~~our~~ existing **ones. Geopolitical events can also affect patent processes. For instance, U. S. and foreign government actions regarding Russia' s invasion of Ukraine might impede patent filing and maintenance in Russia. A 2022 Russian decree allows exploitation of** patents **from certain foreign entities without consent, potentially affecting our competitive position** and **business** ~~patents that we might obtain in the future~~ . **Furthermore, the recently- formed** ~~Europe~~ **European** ~~' s planned~~ Unified Patent Court ~~may particularly present uncertainties~~ **, or UPC, allows** for **centralized** ~~our ability to protect and enforce our~~ patent **revocation proceedings** ~~rights against competitors~~ in ~~Europe~~ **the EU** . **Although we do not currently own** ~~While that new court is being implemented to provide more certainty and efficiency to patent enforcement throughout Europe, it will also provide our competitors with a new forum to use to centrally revoke our~~ European patents **that become subject to this court' s jurisdiction, our future European patents that become subject to this court' s jurisdiction could present risks that might affect our business and commercialization efforts in Europe** . ~~It will be several years~~ **The UPC' s evolving laws may affect our ability to defend or** ~~before~~ - **enforce** ~~we will understand the~~ **those** ~~scope~~ **European patents. We may opt out** of **the UPC' s jurisdiction for our future European patents, but compliance challenges remain. Overall, the evolving** patent **laws present ongoing challenges** ~~rights that will be recognized~~ and **may affect** ~~the strength of patent remedies that will be provided by that court~~ -- **our business and intellectual property strategy** ~~. We will have the right to opt our patents out of that system over the first seven years of the court, but doing so may preclude us from realizing the benefits of the new unified court~~ . Obtaining And Maintaining Our Patent Protection Depends On Compliance with Various Procedural, Document Submission, Fee Payment and Other Requirements Imposed by Governmental Patent Agencies, And Our Patent Protection Could be Reduced or Eliminated For Non- Compliance With These Requirements. Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. Although an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include failure to respond to official actions within prescribed time limits, non- payment of fees, and failure to properly legalize and submit formal documents. In any such event, our competitors might be able to enter the market, which would have a material adverse effect on our business. If We Are Unable To Protect The Confidentiality Of Our Trade Secrets, Our Business And Competitive Position Would Be Harmed. In addition to seeking patents for some of our technology and product candidates, we also rely on trade secrets and confidentiality agreements to protect our unpatented know- how, technology, and other proprietary

and confidential information and to maintain our competitive position. Trade secrets and know- how can be difficult to protect. In particular, we anticipate that with respect to our technology platform, these trade secrets and know- how will over time be disseminated within the industry through independent development, the publication of journal articles describing the methodology, and the movement of personnel from academic to industry scientific positions. We seek to protect these trade secrets and other proprietary technology, in part, by entering into non- disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors, and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. We cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary technology and processes. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time- consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect proprietary information. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, or misappropriation of our intellectual property by third parties, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results, and financial condition. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position would be materially and adversely harmed. If We Do Not Obtain Patent Term Extension And Data Exclusivity For Any Product Candidates We May Develop, Our Business May Be Materially Harmed. Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we may develop, one or more of our U. S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Action of 1984, or Hatch- Waxman Amendments. The Hatch- Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or if the term of any such extension is less than we request, we will be unable to rely on our patent position to forestall the marketing of competing products following our patent expiration, and our business, financial condition, results of operations, and prospects could be materially harmed. Intellectual Property Rights Do Not Necessarily Address All Potential Threats. The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example: • others may be able to make gene therapy products that are similar to any product candidates we may develop or utilize similar gene therapy technology but that are not covered by the claims of the patents that we license or may own in the future; • we, or our license partners or current or future collaborators, might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future; • we, or our license partners or current or future collaborators, might not have been the first to file patent applications covering certain of our or their inventions; • others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights; • it is possible that our pending licensed patent applications or those that we may own in the future will not lead to issued patents; • issued patents that we hold rights to may be held invalid or unenforceable, including as a result of legal challenges by our competitors; • our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets; • we may not develop additional proprietary technologies that are patentable; • the patents of others may harm our business; and • we may choose not to file a patent in order to maintain certain trade secrets or know- how, and a third party may subsequently file a patent covering such intellectual property. Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations, and prospects. We May Be Subject To Claims That Our Employees, Consultants, Or Advisors Have Wrongfully Used Or Disclosed Confidential Information Of Their Current Or Former Employers Or Other Third Parties Or Claims Asserting Ownership Of What We Regard As Our Own Intellectual Property. Many of our employees, consultants, and advisors are currently or were previously employed at universities or other biotechnology or pharmaceutical companies. Although we try to ensure that our employees, consultants, and advisors do not use the proprietary information or know- how of others in their work for us, we may be subject to claims that we or these individuals have used or disclosed confidential information or intellectual property, including trade secrets or other proprietary information, of any such individual' s current or former employer or other third party. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to our management and employees. In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self- executing, or the assignment agreements may

be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Such claims could have a material adverse effect on our business, financial condition, results of operations, and prospects. If Our Trademarks Are Not Adequately Protected, Then We May Not Be Able To Build Name Recognition In Our Markets Of Interest And Our Business May Be Adversely Affected. If our trademarks are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected. Our unregistered trademarks may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our unregistered trademarks. Over the long term, if we are unable to successfully register our trademarks and establish name recognition based on our trademarks, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely impact our financial condition or results of operations. Risks Related to The Ownership of Our Common Shares We Have Broad Discretion In The Use Of Our Cash Reserves And May Not Use Such Cash Reserves Effectively. Our management has broad discretion to use our cash reserves and could use our cash reserves in ways that do not improve our results of operations or enhance the value of our common shares. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common shares to decline, and delay the development **or commercialization** of our product candidates. Pending their use, we may invest our cash reserves in a manner that does not produce income or that loses value. Sales Of A Substantial Number Of Our Common Shares In The Public Market Could Cause Our Share Price To Fall. Sales of a substantial number of our common shares in the public market or the perception that these sales might occur could depress the market price of our common shares, could make it more difficult for you to sell your common shares at a time and price that you deem appropriate and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common shares. **For example, we actively maintain a sales agreement with Jefferies under which we are able to offer and sell, from time to time at our sole discretion through Jefferies, as our sales agent, our common shares, par value of CHF 0. 03 per share. As of December 31, 2023, we have $ 385. 6 million remaining under our current prospectus supplement and have issued and sold an aggregate of 1. 5 million common shares at an average price of $ 139. 91 per share for aggregate proceeds of $ 211. 5 million, which were net of equity issuance costs of $ 2. 9 million.** We Do Not Expect To Pay Dividends In The Foreseeable Future. We have not paid any dividends since our incorporation. Even if future operations lead to significant levels of distributable profits, we currently intend that any earnings will be reinvested in our business and that no dividends will be paid prior to the time we have an established revenue stream to support continuing dividends. The proposal to pay future dividends to shareholders will in addition effectively be at the discretion of our board of directors and shareholders after taking into account various factors including our business prospects, cash requirements, financial performance and new product development. In addition, payment of future dividends is subject to certain limitations pursuant to Swiss law or by our articles of association. Accordingly, investors cannot rely on dividend income from our common shares and any returns on an investment in our common shares will likely depend entirely upon any future appreciation in the price of our common shares. Dividends, if any, paid on our common shares are subject to Swiss federal withholding tax, except if paid out of reserves from capital contributions, or Kapitaleinlagen **. For additional information, please see" Risk Factors — Risks Related to The Ownership of Our Common Shares — Our Status As A Swiss Corporation May Limit Our Flexibility With Respect To Certain Aspects Of Capital Management And May Cause Us To Be Unable To Make Distributions Without Subjecting Our Shareholders To Swiss Withholding Tax"** . We Are A Swiss Corporation. The Rights Of Our Shareholders May Be Different From The Rights Of Shareholders In Companies Governed By The Laws Of U. S. Jurisdictions. We are a Swiss corporation. Our corporate affairs are governed by our articles of association and by Swiss law. The rights of our shareholders and the responsibilities of members of our board of directors may be different from the rights and obligations of shareholders and directors of companies governed by the laws of U. S. jurisdictions. In the performance of its duties, our board of directors is required by Swiss law to consider the interests of our Company, our shareholders and our employees with due observation of the principles of reasonableness and fairness. It is possible that the board of directors will consider interests that are different from, or in addition to, your interests as a shareholder. Swiss corporate law limits the ability of our shareholders to challenge resolutions made or other actions taken by our board of directors in court. Our shareholders generally are not permitted to file a suit to reverse a decision or an action taken by our board of directors but are instead only permitted to seek damages for breaches of the duty of care and loyalty. As a matter of Swiss law, shareholder claims against a member of our board of directors for breach of the duty of care and loyalty would have to be brought in Zug, Switzerland, or where the relevant member of our board of directors is domiciled. In addition, under Swiss law, any claims by our shareholders against us must be brought exclusively in Zug, Switzerland. As A Swiss Corporation, We Are Subject To Swiss Legal Provisions That May Limit Our Flexibility To Swiftly Implement Certain Initiatives Or Strategies. We are required, from time to time, to evaluate the carrying amount of our investments in affiliates, as presented on our Swiss standalone balance sheet. If we determine that the carrying amount of any such investment exceeds its fair value, we may conclude that such investment is impaired. The recognized loss associated with such a non- cash impairment could result in our net assets no longer covering our statutory share capital and statutory capital reserves. Under Swiss law, if our net assets cover less than 50 percent of our statutory share capital, statutory capital reserves and statutory earnings reserves that are not repayable to shareholders, the board of directors must take appropriate measure to overcome the situation and, if necessary,

convene a general meeting of shareholders and propose measures to remedy such a capital loss. The appropriate measures depend on the relevant circumstances and the magnitude of the recognized loss and may include seeking shareholder approval for offsetting the aggregate loss, or a portion thereof, with our statutory capital reserves including qualifying additional paid- in capital otherwise available for distributions to shareholders or raising new equity. Depending on the circumstances, we may also need to use qualifying additional paid - in capital available for distributions in order to reduce our accumulated net loss and such use might reduce our ability to make distributions without subjecting our shareholders to Swiss withholding tax. These Swiss law requirements could limit our flexibility to swiftly implement certain initiatives or strategies. Anti- takeover Provisions In Our Articles Of Association Could Make An Acquisition Of Our Company, Which May Be Beneficial To Our Shareholders, More Difficult And May Prevent Attempts By Our Shareholders To Replace Or Remove Our Current Management. Provisions in our articles of association may discourage, delay or prevent an acquisition of our Company or changes in the composition of our board of directors. Among other things, these provisions require the approval of at least two thirds of represented shares present or voting at a shareholder meeting for the removal of a member of our board of directors and to increase the maximum number of members of our board of directors; limit the accumulated voting rights of any person or entity to 15 % of our registered share capital; limit the voting rights of an acquirer of more than 5 % of our registered share capital in a transaction or series of transactions in which our board of directors did not provide for an exemption, which could prevent or delay a change in control of our Company; provide that the board of directors is authorized **to conduct one or more increases of the Company' s share capital** , at any time **until** ~~during a maximum two - year period, which under our current authorized share capital will expire on~~ June ~~10~~ **8** , ~~2023~~ **2028** ~~and will~~ , **or** ~~if resolved by~~ the **expiry of the** ~~shareholders' meeting, be replaced by a~~ capital band ~~(Kapitalband)~~ **, if earlier** (see " Risk Factors **— Risks Related to The Ownership of Our Common Shares** — Our Status As A Swiss Corporation May Limit Our Flexibility With Respect To Certain Aspects Of Capital Management And May Cause Us To Be Unable To Make Distributions Without Subjecting Our Shareholders To Swiss Withholding Tax "), to issue a specified number of shares **within the limit of the capital band** , which under our current ~~authorized share~~ capital **band** is approximately **sixteen** ~~forty- nine~~ percent of the share capital registered in the commercial register, and to limit or withdraw the preemptive rights of existing shareholders in various circumstances; provide for a conditional share capital that authorizes the issuance of additional shares up to a maximum amount of approximately thirty- ~~two~~ **five** percent of the share capital registered in the commercial register, without obtaining additional shareholder approval, (i) through the exercise of conversion and / or option rights granted in connection with bonds or similar instruments, including convertible debt instruments, and (ii) in connection with the exercise of options granted to employees or other service providers of the Company or any of its subsidiaries; and provide that a merger or demerger transaction requires the affirmative vote of at least two thirds of the shares represented at a shareholders' meeting. Although we believe these provisions collectively provide for an opportunity to obtain greater value for shareholders by requiring potential acquirors to negotiate with our board of directors, they would apply even if an offer rejected by our board were considered beneficial by some shareholders. In addition, these provisions may frustrate or prevent any attempts by our shareholders to replace or remove our current management by making it more difficult for shareholders to replace members of our board of directors, which is responsible for appointing the members of our management. Our Common Shares Are Issued Under The Laws Of Switzerland, Which May Not Protect Investors In A Similar Fashion Afforded By Incorporation In A U. S. State. We are organized under the laws of Switzerland. However, there can be no assurance that Swiss law will not change in the future or that it will serve to protect investors in a similar fashion afforded under corporate law principles in the United States, which could adversely affect the rights of investors. Our Status As A Swiss Corporation May Limit Our Flexibility With Respect To Certain Aspects Of Capital Management And May Cause Us To Be Unable To Make Distributions Without Subjecting Our Shareholders To Swiss Withholding Tax. Our articles of association as in force allow our shareholders to **introduce a capital band** ~~authorize~~ **authorizing the board of directors to increase the** share capital ~~that can be issued by the board of directors~~ without additional shareholder approval. The ~~authorized share~~ capital **band** approved by our shareholders will expire on June ~~10~~ **8** , ~~2023~~ **2028** and is limited to approximately **sixteen** ~~forty- nine~~ percent of our **currently** registered share capital pursuant to the articles of association in force ~~. Pursuant to the Swiss corporate law reform effective January 1, 2023, a capital band (Kapitalband) was introduced as replacement of the authorized share capital. The authorized share capital as approved by the shareholders will thus, upon its expiry on June 10, 2023, need to be replaced by a capital band. Such capital band, if resolved by the shareholders' meeting, will authorize the board of directors to, within up to five years, increase or, subject to a respective resolution of the shareholders' meeting, also to decrease the share capital. This authorization is in each case limited to 50 % of the existing registered share capital and must be renewed by the shareholders upon expiry of the respective term~~ . Subject to specified exceptions, Swiss law grants preemptive rights to existing shareholders to subscribe to any new issuance of shares. Swiss law also does not provide as much flexibility in the various terms that can attach to different classes of shares as the laws of some other jurisdictions. Swiss law also reserves for approval by shareholders certain corporate actions over which a board of directors would have authority in some other jurisdictions. For example, the payment of dividends and the cancellation of treasury shares must be approved by shareholders. These Swiss law requirements relating to our capital management may limit our flexibility, and situations may arise where greater flexibility would have provided substantial benefits to our shareholders. Under Swiss law, a Swiss corporation may pay dividends only if the corporation has sufficient distributable profits, or if the corporation has distributable reserves, each as evidenced by its audited standalone statutory balance sheet, and after allocations to reserves required by Swiss law and our articles of association have been deducted. Freely distributable reserves are generally booked either as ~~" free~~ **" statutory capital** reserves **"** ~~" or as " capital contributions "~~ (~~Kapitaleinlagen~~ **gesetzliche Kapitalreserven** , contributions received from shareholders) **or** in the ~~" reserve from capital contributions~~ **statutory or voluntary" retained earnings** . " Distributions may be made out of registered share capital — the aggregate par value of a company' s registered shares — only by way of a capital reduction. We will not be able to pay dividends or make other distributions to shareholders on a Swiss withholding tax- free basis in excess of our aggregate

qualifying contributions and registered share capital unless we increase our share capital or our reserves from capital contributions. We would also be able to pay dividends out of distributable profits or freely distributable reserves, but such dividends would be subject to Swiss withholding taxes. There can be no assurance that we will have sufficient distributable profits, ~~free~~ **capital** reserves, **retained earnings** ~~reserves from capital contributions~~ or registered share capital to pay a dividend or effect a capital reduction, that our shareholders will approve dividends or capital reductions proposed by us or that we will be able to meet the other legal requirements for dividend payments or distributions as a result of capital reductions. Dividends and similar cash or in- kind distributions made by the Company to a shareholder (including liquidation proceeds and stock dividends) are subject to Swiss withholding tax (Verrechnungssteuer), currently at a rate of 35 % (applicable to the gross amount of the taxable distribution). The Company is obliged to deduct the Swiss withholding tax from the gross amount of any taxable distribution and to pay the tax to the Swiss Federal Tax Administration within 30 calendar days of the due date of such distribution. However, the repayment of the nominal value of the shares and any repayment of qualifying additional paid- in capital (capital contribution reserves (Reserven aus Kapitaleinlagen)) are not subject to Swiss withholding tax. The Swiss withholding tax will also apply to payments (exceeding the respective share capital and used capital contribution reserves) upon a repurchase of shares by the Company, (i) if the Company' s share capital is reduced upon such repurchase (redemption of shares), (ii) if the total of repurchased shares exceeds 10 % of the Company' s share capital or (iii) if the repurchased shares are not resold within six years after the repurchase. This six- year deadline to resell the repurchased shares is suspended for so long as the shares are reserved to cover obligations under convertible bonds, option bonds or employee stock option plans (in the case of employee stock option plans, the maximum suspension is six years). In the event of a taxable share repurchase, Swiss withholding tax is imposed on the difference between the repurchase price and the sum of the nominal value of the repurchased shares and capita contribution reserves paid back upon the repurchase. Swiss resident individuals who hold their shares as private assets, or Resident Private Shareholders, are in principle eligible for a full refund or credit against income tax of the Swiss withholding tax if they duly report the underlying income in their income tax return. In addition, (i) corporate and individual shareholders who are resident in Switzerland for tax purposes, (ii) corporate and individual shareholders who are not resident in Switzerland, and who, in each case, hold their shares as part of a trade or business carried on in Switzerland through a permanent establishment with fixed place of business situated in Switzerland for tax purposes and (iii) Swiss resident private individuals who, for income tax purposes, are classified as " professional securities dealers " for reasons of, inter alia, frequent dealing, or leveraged investments, in shares and other securities (collectively, " Domestic Commercial Shareholders ") are in principle eligible for a full refund or credit against income tax of the Swiss withholding tax if they duly report the underlying income in their income statements or income tax return, as the case may be. Shareholders who are not resident in Switzerland for tax purposes, and who, during the respective taxation year, have not engaged in a trade or business carried on through a permanent establishment with fixed place of business situated in Switzerland for tax purposes, and who are not subject to corporate or individual income taxation in Switzerland for any other reason (collectively, " Non- Resident Shareholders ") may be entitled to a total or partial refund of the Swiss withholding tax if the country in which such recipient resides for tax purposes maintains a bilateral treaty, or Tax Treaty, for the avoidance of double taxation with Switzerland and further conditions of such Tax Treaty are met. A U. S. shareholder that qualifies for benefits under the U. S.- Swiss Tax Treaty, may apply for a refund of the tax withheld in excess of the 15 % treaty rate (or in excess of the 5 % reduced treaty rate for qualifying corporate shareholders with at least 10 % voting rights, or for a full refund in the case of qualified pension funds). Non- Resident Shareholders should be aware that the procedures for claiming treaty benefits (and the time required for obtaining a refund) may differ from country to country. Non- Resident Shareholders should consult their own legal, financial or tax advisors regarding receipt, ownership, purchases, sale or other dispositions of shares and the procedures for claiming a refund of the Swiss withholding tax. Certain U. S. Shareholders May Be Subject To Adverse U. S. Federal Income Tax Consequences If We Are A Controlled Foreign Corporation. Each " Ten Percent Shareholder " (as defined below) in a non- U. S. corporation that is classified as a " controlled foreign corporation, " or a CFC, for United States federal income tax purposes generally is required to include in income for U. S. federal tax purposes such Ten Percent Shareholder' s pro rata share of the CFC' s " Subpart F income " and investment of earnings in U. S. property, even if the CFC has made no distributions to its shareholders. Subpart F income generally includes dividends, interest, rents and royalties, gains from the sale of securities and income from certain transactions with related parties. For tax years beginning after December 31, 2017, each Ten Percent Shareholder of a CFC is also required to include in income such Ten Percent Shareholder' s share of " global intangible low- taxed income " with respect to such CFC. In addition, a Ten Percent Shareholder that realizes gain from the sale or exchange of shares in a CFC may be required to classify a portion of such gain as dividend income rather than capital gain. A non- U. S. corporation generally will be classified as a CFC for United States federal income tax purposes if Ten Percent Shareholders own, directly or indirectly, more than 50 % of either the total combined voting power of all classes of stock of such corporation entitled to vote or of the total value of the stock of such corporation. A " Ten Percent Shareholder " is a United States person (as defined by the U. S. Internal Revenue Code of 1986, as amended, or the Code, who owns or is considered to own 10 % or more of (1) the total combined voting power of all classes of stock entitled to vote or (2) the value of all classes of stock of such corporation. The determination of CFC status is complex and includes attribution rules, the application of which is not entirely certain. During our ~~2022~~ **2023** taxable year we believe that we had certain shareholders that were Ten Percent Shareholders for U. S. federal income tax purposes. However, our CFC status for the taxable year ending on December 31, ~~2022~~ **2023** and our current taxable year is unknown and we may be a CFC for the taxable year ending on December 31, ~~2022~~ **2023** , our current taxable year or a following year. In addition, recent changes to the attribution rules relation to the determination of CFC status may make it difficult to determine our CFC status for any taxable year. Furthermore, it is possible that our non- United States subsidiaries will be CFCs for the current taxable year or a future taxable year even if we are not a CFC for such taxable year (s). U. S. holders should consult their own tax advisors with respect to the potential adverse U. S. tax consequences of becoming a Ten

Percent Shareholder in a CFC. If we are classified as both a CFC and a passive foreign investment company, or PFIC, we generally will not be treated as a PFIC with respect to those U. S. holders that meet the definition of a Ten Percent Shareholder during the period in which we are a CFC. Certain U. S. Shareholders May Suffer Adverse Tax Consequences If We Are Characterized As A Passive Foreign Investment Company. Generally, if, for any taxable year, at least 75 % of our gross income is passive income, or at least 50 % of the value of our assets is attributable to assets that produce passive income or are held for the production of passive income, including cash, we would be characterized as a PFIC for U. S. federal income tax purposes. For purposes of these tests, passive income includes dividends, interest, and gains from the sale or exchange of investment property and rents and royalties other than rents and royalties which are received from unrelated parties in connection with the active conduct of a trade or business. If we are characterized as a PFIC, U. S. holders of our common shares may suffer adverse tax consequences, including having gains realized on the sale of the common shares treated as ordinary income, rather than capital gain, the loss of the preferential rate applicable to dividends received on the common shares by individuals who are U. S. holders, and having interest charges apply to distributions by us and the proceeds of sales of the common shares. Our status as a PFIC will depend on the composition of our income and the composition and value of our assets which may be determined in part by reference to the quarterly market value of our common shares, which may be volatile. Our status may also depend, in part, on how, and how quickly, we utilize the cash proceeds from prior offerings in our business. Our status as a PFIC is a fact-intensive determination made on an annual basis and we cannot provide any assurances regarding our PFIC status for any past, current or future taxable years. Because it is possible we were a PFIC for the ~~2021~~ **2022** taxable year, we provided information necessary for our shareholders to make a qualified electing fund, or QEF, election with respect to us for the ~~2021~~ **2022** taxable year. We provided such information on our website (www. crisprtx. com). A U. S. holder that makes a QEF election with respect to our shares is required to include a pro rata share of our income on a current basis, whether or not we make distributions. For the ~~2021~~ **2022** taxable year, the Company- wide amount of ordinary earnings and net capital gain for purposes of the QEF inclusion rules was $ ~~504~~ **0** . ~~7~~ **0** million of ordinary earnings and $ 0. 0 net capital gain, and we may have material amounts of ordinary earnings and / or net capital gain for purposes of the QEF inclusion rules in the ~~2022~~ **2023** taxable year or future taxable years. Although we have not yet determined whether we are a PFIC for the ~~2021~~ **2022** taxable year or the current taxable year, it is possible that we may be a PFIC for the ~~2021~~ **2022** taxable year and / or current taxable year as well. We will endeavor to provide to you, for each taxable year that we are or may be a PFIC, a PFIC Annual Information Statement containing information necessary for you to make a QEF election with respect to us. Alternatively, a U. S. holder may be able to make a mark- to- market election, assuming that our shares constitute " marketable " securities under the Code, which generally avoids the adverse consequences of PFIC status discussed above, but would require a U. S. holder to annually report as ordinary income any increase in value of our shares during the year (as well as generally allowing deductions for any decrease in the value of our shares). If we are determined to be a PFIC, a U. S. holder will generally be treated as owning a proportionate amount (by value) of shares owned by us in any of our direct or indirect subsidiaries that are also PFICs, each a lower- tier PFIC, and will be subject to similar adverse rules with respect to distributions from, or dispositions of, such lower- tier PFICs, in each case as if such U. S. holder held such shares directly (even if such U. S. holder does not receive the proceeds of such distributions or dispositions directly). We have not determined whether any of our subsidiaries (including TRACR and CRISPR Therapeutics Ltd.) are or may be lower- tier PFICs for any prior taxable year, the current taxable year or future taxable years, and we do not intend to do so. We also do not intend to make available the information necessary for U. S. holders to make a QEF election with respect to any lower- tier PFICs and therefore you should expect that you will not be able to make a QEF election with respect to them. You are urged to consult your own tax advisors regarding our PFIC status and the tax considerations relevant to an investment in a PFIC, including the availability, and advisability, of, and procedure for making, a QEF election or a mark to market election with respect to us, and the application of the PFIC rules to any of our subsidiaries. U. S. Shareholders May Not Be Able To Obtain Judgments Or Enforce Civil Liabilities Against Us Or Our Executive Officers Or Members Of Our Board Of Directors. We are organized under the laws of Switzerland and our registered office and domicile is located in Zug, Switzerland. Moreover, **previously** certain of our directors and executive officers ~~are~~ **were** not residents **, and again in the future could not be residents,** of the United States, and all or a substantial portion of the assets of such persons ~~are~~ **were** located **, or could be in the future, located,** outside the United States. As a result, it may not be possible for investors to effect service of process within the United States upon us or upon such persons or to enforce against them judgments obtained in U. S. courts, including judgments in actions predicated upon the civil liability provisions of the federal securities laws of the United States. We have been advised by our Swiss counsel that there is doubt as to the enforceability in Switzerland of original actions, or in actions for enforcement of judgments of U. S. courts, of civil liabilities to the extent solely predicated upon the federal and state securities laws of the United States. Original actions against persons in Switzerland based solely upon the U. S. federal or state securities laws are governed, among other things, by the principles set forth in the Swiss Federal Act on Private International Law. This statute provides that the application of provisions of non- Swiss law by the courts in Switzerland shall be precluded if the result is incompatible with Swiss public policy. Also, mandatory provisions of Swiss law may be applicable regardless of any other law that would otherwise apply. Switzerland and the United States do not have a treaty providing for reciprocal recognition and enforcement of judgments in civil and commercial matters. The recognition and enforcement of a judgment of the courts of the United States in Switzerland is governed by the principles set forth in the Swiss Federal Act on Private International Law. This statute provides in principle that a judgment rendered by a non- Swiss court may be enforced in Switzerland only if: • the non- Swiss court had jurisdiction pursuant to the Swiss Federal Act on Private International Law; • the judgment of such non- Swiss court has become final and non- appealable; • the judgment does not contravene Swiss public policy; • the court procedures and the service of documents leading to the judgment were in accordance with the due process of law; and • no proceeding involving the same position and the same subject matter was first brought in Switzerland, or adjudicated in Switzerland, or was earlier adjudicated in a third state and this decision is recognizable in Switzerland **to identify**

and mitigate threats,the development and maintenance of these systems,controls and processes is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly sophisticated.Moreover,despite our efforts,the possibility of these events occurring cannot be eliminated entirely.As we outsource more of our information systems to vendors,engage in more electronic transactions with payors and patients,and rely more on cloud- based information systems,the related security risks will increase and we will need to expend additional resources to protect our technology and information systems.In addition,there can be no assurance that our internal information technology systems or ~~those of~~ . General Risks We Incur Significant Costs As A Result Of Operating As A Public Company And Our Management Is Required To Devote Substantial Time To Compliance Initiatives And Corporate Governance Practices. As a public company, we incur significant legal, accounting and other expenses. SOX, the Dodd- Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The Nasdaq Global Market, and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel devote a substantial amount of time towards maintaining compliance with these requirements. Moreover, these requirements increase our legal and financial compliance costs and make some activities more time- consuming and costly. Pursuant to SOX Section 404, we are required to furnish a report by our management on our internal control over financial reporting, including an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. In this regard, we incur substantial accounting expenses and expend significant management efforts. Our testing may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses or significant deficiencies. If we identify one or more material weaknesses, or significant deficiencies that we cannot remediate in a timely manner, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements. The Market Price Of Our Common Shares Has Been Volatile and Fluctuate Substantially, Which Could Result In Substantial Losses For Shareholders. Our share price has been, and in the future may be, subject to substantial volatility. In addition, the stock market in general, and Nasdaq listed biopharmaceutical companies in particular have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. For example, our shares traded within a range of a high price of $ 220. 20 and a low price of $ 11. 63 per share for the period beginning on October 19, 2016, our first day of trading on the Nasdaq Global Market, through December 31, ~~2022~~ **2023** . As a result of this volatility, our shareholders could incur substantial losses. In addition, the market price for our common shares may be influenced by many factors, including: • the success of existing or new competitive products or technologies; • the timing and results of any product candidates that we may develop; • commencement or termination of collaborations for our product development and research programs; • failure or discontinuation of any of our product development and research programs; • results of preclinical studies, clinical trials, or regulatory approvals of product candidates of our competitors, or announcements about new research programs or product candidates of our competitors; • developments or changing views regarding the use of genomic products, including those that involve gene editing; • regulatory or legal developments in the United States and other countries; • developments or disputes concerning patent applications, issued patents, or other proprietary rights; • the recruitment or departure of key personnel; • the level of expenses related to any of our research programs, clinical development programs, or product candidates that we may develop; • the results of our efforts to discover, develop, acquire or in- license additional product candidates or products; • actual or anticipated changes in estimates as to financial results, development timelines, or recommendations by securities analysts; • announcement or expectation of additional financing efforts; • sales of our common shares by us, our insiders, or other shareholders; • expiration of market stand- off or lock- up agreements; • variations in our financial results or those of companies that are perceived to be similar to us; • changes in estimates or recommendations by securities analysts, if any, that cover our common shares; • changes in the structure of healthcare payment systems; • market conditions in the pharmaceutical and biotechnology sectors; • general economic, industry and market conditions; and • the other factors described in this " Risk Factors " section. These and other market and industry factors may cause the market price and demand for our common shares to fluctuate substantially, regardless of our actual operating performance, which may limit or prevent investors from readily selling their common shares and may otherwise negatively affect the liquidity of our common shares. In the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our shareholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management. Unfavorable Global Economic Conditions Could Adversely Affect Our Business, Financial Condition Or Results Of Operations. Our results of operations could be adversely affected by general conditions in the global economy, disruption of global financial markets and a recession or market correction, including, for example, as a result of the coronavirus pandemic, **political unrest, including as a result of geopolitical tension such as a deterioration in the relationship between the United States and China, escalation of tensions between China and Taiwan,** the ongoing military conflict between Russia and Ukraine and ~~the~~ related sanctions imposed against Russia **, or the Israel- Hamas war** , and other global macroeconomic factors such as inflation. Such conditions could reduce our ability to access capital, which could in the future negatively affect our liquidity and could materially affect our business and the value of our common stock .Our Business May Be Adversely Affected By A Pandemic,Epidemic Or Outbreak Of An Infectious Disease,Such As The ~~Recent~~ **Ongoing** Coronavirus Pandemic And The Emergence of Additional Variants.Our business could be adversely affected by health epidemics in regions where we have concentrations of clinical trial sites or other business activities and could cause significant disruption in the operations of third- party contract manufacturers and contract research organizations upon whom we rely,as well as our ability to recruit patients for our clinical trials. ~~The recent~~ **For example,the ongoing** coronavirus pandemic ~~had~~ **continues to have** unpredictable impacts on global societies,economies,financial markets,and business practices around the world **.The extent to which the ongoing coronavirus pandemic may impact our business,results of operations and future growth prospects will depend on a variety of factors**

and future developments,which are highly uncertain and cannot be predicted with confidence,including the duration,scope and severity of the pandemic,particularly as virus variants continue to spread .For example,we experienced,and may experience again,some temporary delays or disruptions due to the coronavirus pandemic,including pauses in and delays to patient dosing,limited or reduced patient access to ICU beds,hospitals and healthcare resources generally,delayed initiation of new clinical trial sites and limited on- site personnel support at various trial sites.In addition,certain of our third- party manufacturers and suppliers paused their operations **in the early stages of the pandemic,and some have paused their operations again as additional waves of the coronavirus pandemic have impacted local communities and / or** as a result of ~~the pandemic,and may in the future pause their operations again if additional waves of the coronavirus or other pandemics impact local communities and / or as a result of~~ national and local regulations. **We are** ~~While the global public health emergency declaration related to the coronavirus ended in May 2023,we continue to~~ actively ~~monitor~~ **monitoring** and ~~manage~~ **managing** our response and ~~continue to evaluate~~ **evaluating** the actual and potential impacts to our business operations,including on our ongoing and planned clinical trials.We will continue to work closely with our third- party vendors,collaborators,and other parties in order to seek to advance our programs and pipeline of product candidates,while keeping the health and safety of our employees and their families,partners,third- party vendors,healthcare providers,patients and communities a top priority ~~.Conditions in the banking system and financial markets,including the failure of banks and financial institutions,could have an adverse effect on our operations and financial results.Actual events involving limited liquidity,defaults,non- performance or other adverse~~ . If Securities Analysts Do Not Publish Research Or Reports About Our Business Or If They Publish Negative Evaluations Of Our Common Shares, The Price Of Our Common Shares Could Decline. The trading market for our common shares will rely in part on the research and reports that industry or financial analysts publish about us or our business. If one or more of the analysts covering our business downgrade their evaluations of our common shares, the price of our common shares could decline. If one or more of these analysts cease to cover our common shares, we could lose visibility in the market for our common shares, which in turn could cause our common share price to decline. Our Business Is Subject To Economic, Political, Regulatory And Other Risks Associated With International Operations. Our business is subject to risks associated with conducting business internationally. We and a number of our suppliers and collaborative and clinical study relationships are located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including: • economic weakness, including inflation, or political instability in particular non- U. S. economies and markets; • differing regulatory requirements for drug approvals in non- U. S. countries; • potentially reduced protection for intellectual property rights; • difficulties in compliance with non- U. S. laws and regulations; • changes in non- U. S. regulations and customs, tariffs and trade barriers; • changes in non- U. S. currency exchange rates and currency controls; • changes in a specific country' s or region' s political or economic environment; • trade protection measures, import or export licensing requirements or other restrictive actions by U. S. or non- U. S. governments; • negative consequences from changes in tax laws; • compliance with tax, employment, immigration and labor laws for employees living or traveling outside the United States; • workforce uncertainty in countries where labor unrest is more common than in the United States; • difficulties associated with staffing and managing international operations, including differing labor relations; • production shortages resulting from any events affecting raw material supply or manufacturing capabilities outside the United States; **and** • business interruptions resulting from geo- political actions, including war and terrorism, or natural disasters including floods and fires ~~;~~ **. Disruptions At The FDA, The SEC** and ~~• adverse effects and~~ **Other Government Agencies Caused By Funding Shortages Or Potential Funding Shortages Could Hinder Their Ability To Hire And Retain Key Leadership And Other Personnel, Prevent New Products And Services From Being Developed Or Commercialized In A Timely Manner, Or Otherwise Prevent Those Agencies From Performing Normal Business Functions, Which Could Negatively Impact Our Business And Our Timelines. The** ~~instability~~ ~~----~~ **ability** ~~in global financial markets~~ **of the FDA to review and approve new products can be affected by a variety of factors , including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory, and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the SEC and other government agencies on which our operations may rely is subject to the impacts of** political ~~institutions~~ **events, which are inherently fluid** and **unpredictable. Disruptions at the FDA and other agencies may slow the time necessary for new drugs to be reviewed and / or approved by necessary government agencies, which could adversely affect our business. For example, over the last several years, the U. S. government has shut down several times and certain** regulatory agencies ~~resulting from the United Kingdom' s June 23~~ , **such as** ~~2016 vote to leave the EU, subsequent invocation of Article 50 of the Lisbon Treaty on March 29, 2017, and the United Kingdom is formally leaving the EU on January 31, 2020. Our Internal Computer Systems, Or Those Of Our Collaborators Or Other~~ ~~--~~ **the FDA** ~~Contractors Or Consultants, May Fail Or Suffer Security Breaches, Which Could Result In A Material Disruption Of Our Product Development Programs. Our internal computer systems~~ and ~~those~~ ~~--~~ **the** ~~of our current and any future collaborators~~ **SEC, have had to furlough critical FDA, SEC** and other **government employees** ~~contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, accident or security breach to date, if such an~~ **and** ~~event were to~~ **stop critical activities. If a prolonged government shutdown** ~~occur~~ **occurs** ~~and cause interruptions in our operations~~ , it could ~~result in a disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from future clinical trials could result in delays in our regulatory approval efforts and~~ significantly **impact** ~~increase our costs to recover or reproduce~~ the ~~data. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability~~ ~~--~~ **ability** ~~, our competitive position could be harmed and the further development and commercialization~~ of ~~our product candidates could be delayed. We could be subject to risks caused by~~

misappropriation, misuse, leakage, falsification or intentional or accidental release or loss of information maintained in the information systems and networks of our company and our vendors, including personal information of our employees and study subjects, and company and vendor confidential data. In addition, outside parties may attempt to penetrate our systems or those -- **the FDA** of our vendors or fraudulently induce our personnel or the personnel of our vendors to disclose sensitive information in order to gain access to our data and / or systems. We may experience threats to our data and systems, including malicious codes and viruses, phishing and other -- **the SEC** cyber- attacks. The number and complexity of these threats continue to increase over time **timely review** . If a material breach of our information technology systems or those of our vendors occurs, the market perception of the effectiveness of our security measures could be harmed and our reputation and credibility could be damaged..... from occurring, and we have a process to identify and mitigate threats, the..... that our internal information technology systems or **our submissions** those of our third- party contractors , or our consultants' efforts to implement adequate security and control measures, will be sufficient to protect us against breakdowns, service disruption, data deterioration or loss in the event of a system malfunction, or prevent data from being stolen or corrupted in the event of a cyberattack, security breach, industrial espionage attacks or insider threat attacks which could result in financial, legal, **have a material adverse effect on our** business **and** or **our timelines** reputational harm .