Risk Factors Comparison 2025-02-27 to 2024-02-27 Form: 10-K

Legend: **New Text** ~~Removed Text~~ Unchanged Text Moved Text Section

Risks Related to Our ~~business is subject to numerous~~ **Financial Condition and Capital Needs** ~~risks~~ **Risks Related to Our Financial Condition** and ~~uncertainties~~ **Operating History We have a history of operating losses, and we may not achieve or sustain profitability. We anticipate** that **we will continue** ~~you should be aware of in evaluating our business. These risks and uncertainties include, but are not limited~~ to ~~,~~ **incur losses for** the ~~following: • foreseeable future.~~ If ~~, in the future, we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market any of our product candidates, we may not be successful in commercializing those product candidates if and when they are approved. If~~ we fail to obtain ~~necessary~~ additional funding to conduct our planned research and development efforts, we could be forced to delay, reduce, or eliminate our product development programs or commercial development efforts **. We are a late- stage gene therapy company with a limited operating history on which to base your investment decision. Gene therapy product development is a highly speculative undertaking and involves a substantial degree of risk. Our operations to date have been limited primarily to organizing and staffing our company, business planning, raising capital, acquiring, and developing product and technology rights, building out our R & D and manufacturing capabilities, and conducting preclinical and clinical R & D activities for our product candidates** . We have never generated any revenue from product sales and may never be profitable. We..... never generated any revenue from product sales . We have not obtained regulatory approvals for any of our product candidates and have funded our operations to date through proceeds from sales of our stock. We have incurred net losses since our inception. We incurred net losses of $ **258. 7 million, $** 245. 6 million ~~,~~ **and** $ 221. 9 ~~million and $ 169. 1~~ million for the years ended December 31, **2024,** 2023 ~~,~~ **and** 2022 ~~and 2021~~ , respectively. As of December 31, ~~2023~~ **2024** , we had an accumulated deficit of $ ~~959~~ **1** . ~~4~~ **22** ~~million~~ **billion** . Substantially all our operating losses have resulted from costs incurred in connection with our R & D programs, buildout of our manufacturing capabilities and from general and administrative ~~(" G & A ")~~ costs associated with our operations. We expect to continue to incur significant expenses and operating losses for the foreseeable future as we intend to continue to conduct R & D, clinical trials, regulatory compliance activities, and internal and external manufacturing activities. If any of our product candidates are approved, sales and marketing activities, together with anticipated G & A expenses, would likely result in us continuing to incur significant losses for the foreseeable future **. If, in the future, we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market any of our product candidates, we may not be successful in commercializing those product candidates if and when they are approved** . We have limited sales or marketing infrastructure and have no Company experience in the sale, marketing, or distribution of pharmaceutical products. To achieve commercial success for any approved candidate for which we retain sales and marketing responsibilities, we must either continue to develop our sales and marketing organization or outsource these functions to third parties. In the future, we may choose to continue to build a focused sales, marketing, and commercial support infrastructure to sell, or participate in sales activities with our collaborators for, some of our product candidates if and when they are approved. There are risks involved with both establishing our own commercial capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force or reimbursement specialists is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we establish marketing and other commercialization 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 commercialization personnel. If we enter into arrangements with third parties to perform sales, marketing, commercial support, and distribution services, our product revenues or the profitability of these product revenues to us may be lower than if we were to market and sell any medicines we may develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to commercialize our product candidates or may be unable to do so on terms that are favorable to us. We may 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 medicines effectively. The amount of and our ability to use net operating losses and research and development credits to offset future taxable income may be subject to certain limitations and uncertainty. Federal net operating losses generated in taxable years beginning after December 31, 2017 generally may not be carried back to prior taxable years, and while such federal net operating losses generated in taxable years beginning after December 31, 2017 will not be subject to expiration, the deduction for such net operating loss in any taxable year will be limited to 80 % of our taxable income in such year, where taxable income is determined without regard to the net operating loss deduction itself. However, the Coronavirus Aid, Relief and Economic Security Act (the " CARES Act ") repeals the 80 % limitation on the utilization of such federal net operating losses for taxable years beginning after December 31, 2017 and beginning before January 1, 2021 and allows for federal net operating losses generated in taxable years beginning after December 31, 2017 and before January 1, 2021 to be carried back to each of the five taxable years preceding the taxable year in which the loss arises. This change in law temporarily allowing for the carryback of federal net operating losses is not expected to produce any material benefit for the issuer. As described above, we have incurred significant net losses since our inception and anticipate that we will continue to incur losses for the foreseeable future; and therefore, we do not know whether or when we will generate the U. S. federal or state taxable income necessary to utilize our net operating loss or tax credit carryforwards. Additionally, new tax laws could be enacted at any time, and existing tax laws or regulations could be interpreted, modified or applied in a manner that is adverse to us. For example, legislation enacted in 2017, informally titled the Tax Cuts and Jobs Act, or the Tax Act, enacted many significant changes to the U. S. tax laws, including

changes in corporate tax rates, which collectively may impact the utilization of our NOLs and other deferred tax assets, the deductibility of expenses, and the taxation of foreign earnings. Future guidance from the Internal Revenue Service and other tax authorities with respect to the Tax Act may affect us, and certain aspects of the Tax Act could be repealed or modified in future legislation. In addition, it is uncertain if and to what extent various states will conform to the Tax Act, the CARES Act, or any newly enacted federal tax legislation. The impact of changes under the Tax Act, the CARES Act, or future reform legislation could limit our ability to utilize our NOLs or increase our future U. S. tax expense and could have a material adverse impact on our business and financial condition. In general, under Sections 382 and 383 of the Internal Revenue Code, a corporation that undergoes an " ownership change " is subject to limitations on its ability to utilize its pre- change net operating losses, or net operating losses or tax credits, or credits, (including federal research and development tax credits) to offset future taxable income or taxes. For these purposes, an ownership change generally occurs where the aggregate stock ownership of one or more stockholders or groups of stockholders who owns at least 5 % of a corporation' s stock increases its ownership by more than 50 percentage points over its lowest ownership percentage within a specified testing period. As described below, we have experienced numerous " ownership changes " within the meaning of Section 382 of the Internal Revenue Code. Future changes in our stock ownership, many of which are outside of our control, could result in one or more additional ownership changes under Sections 382 and 383 of the Internal Revenue Code and further limit our ability to utilize our net operating losses and credits. Our net operating losses or credits may also be impaired under state law. Accordingly, we may not be able to utilize a material portion of our net operating losses or credits if we undergo an ownership change prior to the utilization of all such net operating losses or credits. Risks Related to Capital ~~Needs~~ **NeedsWe** ~~We~~ may need to raise additional funding, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate certain of our licensing activities, product development efforts or other operations. We expect to require substantial future capital in order to expand our gene therapy platforms, advance preclinical and clinical development for our current product candidates and other future product candidates, if any, and potentially commercialize these product candidates. We expect our spending levels to increase in connection with our preclinical and clinical activities. Also, if we obtain marketing approval for any of our current or future product candidates, we expect to incur significant expenses related to product sales, medical affairs, marketing, manufacturing, and distribution. 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 acceptable terms, we could be forced to delay, limit or terminate our product development efforts or other operations. Furthermore, to the extent we raise additional funds through further issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences, and privileges superior to those of holders of our common stock. Any debt financing secured by us in the future could involve restrictive covenants relating to our capital- raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. Additionally, recent volatility in capital markets, rising interest rates and lower market prices for securities generally may affect our ability to access new capital on terms favorable to us, which may harm our liquidity, limit our ability to grow our business, pursue acquisitions or improve our operating infrastructure and restrict our ability to compete in our markets. Our operations have consumed significant amounts of cash since inception. As of December 31, ~~2023~~ **2024**, our cash, cash equivalents and investments were $ ~~407~~ **372** . ~~5~~ **3** million. Our future capital requirements will depend on numerous factors, many of which are outside of our control. Identifying potential product candidates and conducting preclinical testing and clinical trials is a time- consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory and marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. **We have never generated any revenue from product sales and may never be profitable.** Our ability to generate revenue and achieve profitability depends on our ability, alone or with strategic collaboration partners, to successfully complete the development of, and obtain the regulatory, pricing and reimbursement approvals necessary to commercialize our product candidates. We do not anticipate generating revenues from product sales for the foreseeable future, if ever. Our ability to generate future revenues from product sales depends heavily on our success in: • completing research and preclinical and clinical development of our product candidates; • seeking and obtaining regulatory and marketing approvals for product candidates for which we successfully complete clinical studies; • developing a sustainable, commercial- scale, reproducible, and transferable manufacturing process for our vectors and product candidates; • establishing and maintaining supply and manufacturing relationships with third parties that can provide adequate (in amount and quality) products and services to support preclinical and clinical development and the market demand for our product candidates, if approved; • launching and commercializing product candidates for which we obtain regulatory and marketing approval, either by collaborating with a partner or, if launched independently, by establishing a sales force, marketing and distribution infrastructure; • obtaining and maintaining a favorable market protection for our products, e. g., obtaining (and maintaining) orphan designation with market exclusivity in the EU, which in turn may depend on activities of third parties and other factors on which we have no influence; • obtaining sufficient pricing and reimbursement for our product candidates from private and governmental payors; • obtaining market acceptance of our product candidates and gene therapy as a viable treatment option; • addressing any competing technological and market developments; • identifying and validating new gene therapy product candidates; • negotiating favorable terms in any collaboration, licensing or other arrangements into which we may enter; and • maintaining, protecting and expanding our portfolio of intellectual property rights, including patents, trade secrets and know- how. Even if one or more of the product candidates that we will develop is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Our expenses could increase beyond expectations if we are required by the FDA, the EMA, or other regulatory agencies, domestic or foreign, to perform clinical and other studies in addition to those that we currently anticipate. Even if we generate

revenues from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations. Risks Related to Clinical Development and Product Regulatory **MattersRisks** ~~Matters Risks~~ Related to Clinical Development of our Product ~~Candidates~~ **CandidatesWe may encounter substantial delays in commencement, enrollment or completion of our clinical trials or may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities, which could prevent us from commercializing our current and future product candidates on a timely basis, if at all.** Before obtaining marketing approval from regulatory authorities for the sale of our current and future product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates. Clinical trials are expensive, time- consuming, and outcomes are uncertain. Our experience with clinical trials has been limited. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule, if at all. A clinical trial may be delayed or halted at any stage of testing for various reasons, including: • failure of patients to enroll in the studies at the rate we expect; • ineffectiveness of our product candidates; • patients experiencing unexpected side effects or other safety concerns being raised during treatment; • changes in governmental regulations or administrative actions; • failure to conduct studies in accordance with required clinical practices; • inspection of clinical study operations or study sites by the FDA, the EMA or other regulatory authorities, resulting in a clinical hold; • insufficient financial resources; • insufficient supplies of drug product to treat patients in our ongoing and planned clinical trials; • political unrest or natural disasters at domestic or foreign clinical sites; • a shutdown of the U. S. government, including the FDA; • public health crises such as pandemics and epidemics. In addition, to the extent we seek to obtain regulatory approval for our product candidates in foreign countries, our ability to successfully initiate, enroll and complete a clinical study in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including: • difficulty in establishing or managing relationships with Contract Research Organizations ~~(" CROs ")~~ and physicians; • absence in some countries of established groups with sufficient regulatory expertise for review of LV and AAV gene therapy protocols; • our inability to locate qualified local partners or collaborators for such clinical trials; and • the potential burden of complying with a variety of foreign laws, medical standards and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment. If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit or terminate planned clinical trials, the occurrence of any of which would harm our business, financial condition, results of operations and prospects. Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. We may not be able to identify, recruit and enroll enough patients, or those with required or desired characteristics, to complete clinical trials in a timely manner. Patient enrollment and trial completion is affected by numerous factors including: • severity of the disease under investigation and size of the patient population; • eligibility criteria for the study in question; • perceived risks and benefits of the product candidate under study, including as a result of adverse effects observed in similar or competing therapies; • proximity and availability of clinical study sites for prospective patients; • availability of competing therapies and clinical studies; • patient referral practices of physicians; and • ability to monitor patients adequately during and after treatment. In particular, each of the conditions for which we plan to evaluate our current product candidates are rare genetic diseases with limited patient pools from which to draw for clinical studies. The process of identifying and diagnosing patients may prove costly. In some cases, potential patients may be located outside of the U. S., and immigration related issues, including government policy changes, may introduce additional delays into the enrollment process. Finally, the treatment process for our LV programs requires that the cells be obtained from patients and then shipped to a transduction facility within the required timelines, and this may introduce unacceptable shipping- related delays to the process. Preliminary, interim or topline results in our ongoing clinical studies may not be indicative of results obtained when these studies are completed. Furthermore, success in early clinical studies may not be indicative of results obtained in later studies. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule. Study designs and results from previous or ongoing studies and clinical trials are not necessarily predictive of future study or clinical trial results, and initial or interim results may not continue or be confirmed upon completion of the study or trial. Furthermore, our product candidates may fail to show the desired safety and efficacy in later stages of clinical development despite having successfully advanced through initial clinical studies. We cannot guarantee that any of these studies will ultimately be successful or that preclinical or early- stage clinical studies will support further clinical advancement or regulatory approval of our product candidates. From time to time, we may publicly disclose interim or topline data from our preclinical studies and clinical trials, which is based on a preliminary analysis of then- available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline or preliminary results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, topline data should be viewed with caution until the final data are available. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available or as patients from our clinical trials continue other treatments for their disease. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects. Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercial viability of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is material or otherwise appropriate information to include in our disclosure. Data obtained from preclinical and clinical activities

are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, regulatory delays or rejections may be encountered as a result of many factors, including changes in regulatory policy during the period of product development. Our product candidates may cause undesirable and unforeseen side effects or be perceived by the public as unsafe, which could delay or prevent their advancement into clinical trials or regulatory approval, limit the commercial potential or result in significant negative consequences. Gene therapy is still a relatively new approach to disease treatment and adverse side effects could develop with our product candidates. Possible adverse side effects that could occur with treatment with gene therapy products include an immunologic reaction soon after administration which could substantially limit the effectiveness and durability of the treatment. If certain side effects are observed in testing of our potential product candidates, we may decide or be required to halt or delay further clinical development of our product candidates. The FDA or other regulatory authorities may require us to halt or delay clinical development of our product candidates for reasons unrelated to new drug- related safety events being observed. ~~For example, our Phase 1 clinical trial of RP- A501 for the treatment of DD was placed on clinical hold by the FDA in May of 2021 following a thrombotic microangiopathy event believed to be due to immune- mediated complement activation. We modified the study protocol and other supporting documents with revised guidelines for patient selection and safety management and the clinical hold was lifted in August 2021.~~ In addition to side effects caused by the product candidate, the administration process or related procedures associated with a given product candidate also can cause adverse side effects. If any such adverse events occur, our clinical trials could be suspended or terminated. Under certain circumstances, the FDA, the European Commission, the EMA or other regulatory authorities could order us to cease further development of, or deny approval of, our product candidates for any or all targeted indications. Moreover, if we elect or are required, to not initiate or to delay, suspend or terminate any ongoing or future clinical trial of any of our product candidates, 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. Furthermore, if undesirable side effects caused by our product candidate are identified following regulatory approval of a product candidate, such as in long- term follow- up studies, several potentially significant negative consequences could result, including reputational harm and regulatory authorities suspending or withdrawing approvals of such product candidate, requiring additional warnings on the label or requiring that we change the way a product candidate is administered or that we conduct additional clinical trials. Any of these occurrences may harm our ability to develop other product candidates, and may harm our business, financial condition and prospects significantly. Risks Related to Government ~~Regulation~~ **RegulationOur** ~~Our~~ gene therapy product candidates are based on novel technology, which makes it difficult to predict the time and cost of product candidate development and subsequently obtaining regulatory approval. Currently, relatively few gene and cell therapy products have been approved in the U. S. and the EU. We have concentrated our R & D efforts to date on a gene therapy platform, and our future success depends on the successful development of viable gene therapy product candidates. The clinical study requirements of the FDA, the EMA, and other regulatory agencies 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 potential products. The regulatory approval process for novel product candidates such as ours can be more expensive and take longer than for other, better known or more extensively studied pharmaceutical or other product candidates. Currently, relatively few gene and cell therapy products have received marketing authorization in the U. S. or the EU, including ~~Novartis Pharmaceuticals' Kymriah and~~ Zolgensma (developed by AveXis), ~~Kite Pharma' s Yescarta,~~ GlaxoSmithKline' s Strimvelis, Spark Therapeutics' Luxturna, Vertex Pharmaceuticals' Casgevy ~~and~~ **,** Bluebird Bio' s Lyfgenia **, Pfizer' s Beqvez, Sarepta Therapeutics' Elevidys and Orchard Therapeutics' Lenmeldy** . It is therefore difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates in the U. S., the EU or other jurisdictions. Approvals by the EMA may not be indicative of what the FDA may require for approval. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approvals necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue and our business, financial condition, results of operations and prospects could be materially harmed. Regulatory requirements governing gene therapy products have evolved and may continue to change in the future. For example, FDA' s ~~CBER~~ **Center for Biologics Evaluation and Research** may require us to perform additional nonclinical studies or clinical trials that may increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our gene therapy product candidates or lead to significant post- approval limitations or restrictions. Additionally, the FDA continues to develop its approach to assessing gene and cell therapy products. In January 2020, FDA released its final guidance with recommendations for long- term follow- up studies of patients following human gene therapy administration due to the increased risk of undesirable and unpredictable outcomes with gene therapies that may present as delayed adverse events. The final guidance advises that patients treated with gene therapies that incorporate integrating vectors, such as LVs, undergo long- term safety and efficacy follow up of fifteen years post therapy while patients treated with gene therapies that incorporate AAV vectors undergo long- term safety and efficacy follow- up as long as five years post therapy. We cannot be certain whether such guidance, or others that FDA may issue, will adversely impact our gene therapy candidates or the duration or expense of any applicable regulatory development and review processes. In addition to the submission of an IND to the FDA before initiation of a clinical trial in the U. S., certain human clinical trials involving recombinant or synthetic nucleic acid molecules are subject to oversight of institutional biosafety committees, or IBCs, as set forth in the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules, or NIH Guidelines. Under the NIH Guidelines, recombinant and synthetic nucleic acids are defined as: (i) molecules that are constructed by joining nucleic acid molecules and that can replicate in a living cell (i. e., recombinant nucleic acids); (ii) nucleic acid molecules that are chemically or by other means synthesized or amplified, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules (i. e., synthetic nucleic acids); or (iii) molecules that result from the replication of those described in (i) or (ii). Specifically, under the NIH Guidelines, supervision of human gene transfer trials includes evaluation and assessment by an IBC, a local institutional committee that reviews and

oversees research utilizing recombinant or synthetic nucleic acid molecules at that institution. The IBC assesses the safety of the research and identifies any potential risk to public health or the environment, and such review may result in some delay before initiation of a clinical trial. While the NIH Guidelines are not mandatory unless the research in question is being conducted at or sponsored by institutions receiving NIH funding of recombinant or synthetic nucleic acid molecule research, many companies and other institutions not otherwise subject to the NIH Guidelines voluntarily follow them. In addition, the EMA' s ~~Committee for Advanced Therapies (" CAT ")~~ and other regulatory review committees and advisory groups and any new guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies, 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, we will be required to consult with these regulatory and advisory groups and comply with applicable guidelines. If we fail to do so, we may be required to delay or discontinue development of certain of our product candidates. These additional processes may result in a review and approval process that is longer than we otherwise would have expected. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate product revenue, and our business, financial condition, results of operations and prospects would be materially harmed. Even though we have obtained orphan designation for certain of our product candidates, we may not be able to realize the benefits of such designation, including potential marketing exclusivity of our product candidates, if approved. Regulatory authorities in some jurisdictions, including the U. S., EU and other major markets, may designate drugs intended to treat conditions or diseases affecting relatively small patient populations as orphan drugs. The FDA may designate a product candidate as an orphan drug if it is intended to treat a rare disease or condition, which is generally defined as having a patient population of fewer than 200, 000 individuals in the U. S., or a patient population greater than 200, 000 in the U. S. where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the U. S. In the EU, the European Commission, based on the recommendation of 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 and either (i) such condition affects not more than 5 in 10, 000 persons in the EU; or (ii) without incentives, it is unlikely that sales of the drug in the EU would be sufficient to justify the necessary investment in developing the drug or biologic product. In either case, the applicant for orphan designation must also demonstrate that there exists no satisfactory method of diagnosis, prevention, or treatment of the condition in question that has been authorized in the EU or, if such method exists, the product must be of significant benefit compared to products available for the condition. We have received orphan designation from the FDA and the European Commission for RP- L102 for the treatment of FA, for RP- L201 for the treatment of LAD- I, **RP- A601 for the treatment of PKP2- ACM, and** for RP- L301 for the treatment of PKD, and FDA orphan drug designation for RP- A501 for treatment of DD ~~and RP- A601 for the treatment of PKP2- ACM~~. To date, we have not requested orphan drug designation (or the foreign equivalent) for any other product candidates, and even if we do in the future there can be no assurances that the FDA or foreign regulatory authorities will grant any of our product candidates such designation. Additionally, the designation of any of our product candidates as an orphan product does not mean 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 foreign regulatory authorities from approving another marketing application for a product that constitutes the same drug (or " similar medicinal product " in the EEA, which is defined as a medicinal product containing a similar active substance or substances as contained in an authorized orphan medicinal product, and which is intended for the same therapeutic indication) 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), or if in the EU a " similar medicinal product " is approved before we obtain a market authorizations for our product, we will be precluded from receiving marketing approval for our product for the applicable exclusivity period. The applicable period is seven years in the U. S. and 10 years in the EU. The exclusivity period in the EU may be extended by an additional two years if the applicant enjoys the incentives and rewards granted for including the results of additional pediatric studies in its product information. On the other hand, the exclusivity period in the EU can be reduced to six years if a product no longer meets the criteria for orphan drug designation, such designation is revoked by the sponsor or expires, including if 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 U. S. 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 or is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. Additionally, the U. S. federal courts may interpret the orphan drug statutory or regulatory provisions in way that reduces or eliminates any exclusivity that may attach to our product candidates. The FDA may further reevaluate its regulations and policies related to orphan designation and orphan drug exclusivity. We do not know if, when, or how the FDA may change the orphan drug regulations and policies in the future, and it is uncertain how any changes might affect our business. Depending on what changes the FDA may make to its orphan drug regulations and policies, our business could be adversely impacted. In the EU, 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. A Fast Track or regenerative medicine advanced therapy, or RMAT, designation by the FDA, or a PRIority MEdicines, or PRIME, designation by the EMA, even if granted for any of our current or future product candidates, may not lead to a faster development or regulatory review or approval process, and does not increase the likelihood that our current product candidate and any future product candidates will receive marketing approval. If a product candidate is intended for the treatment of a serious or life- threatening condition and the product demonstrates the potential to address unmet medical needs for this condition, the sponsor may apply for FDA Fast Track designation for a particular indication. We have received Fast Track designation for RP- A501 for DD, RP- L102 for FA, RP- L201 for LAD- I and RP- L301 for PKD. We may seek Fast Track designation for future product candidates, but there is no assurance that the FDA will grant this status to any of our proposed product candidates. A company may request RMAT designation of its product candidate, and FDA may grant such designation if the product meets the following criteria: (i) it is a cell therapy, therapeutic tissue engineering product, human cell and tissue product, or any combination product using such therapies or products, with limited exceptions; (ii) it is intended to treat, modify, reverse, or cure a serious or life- threatening disease or condition; and (iii) preliminary clinical evidence indicates that the drug has the potential to address unmet medical needs for such a disease or condition. We have received RMAT designation for RP- A501 for DD, RP- L102 for FA, RP- L201 for LAD- I and RP- L301 for PKD. RMAT designation provides potential benefits that include more frequent meetings with FDA to discuss the development plan for the product candidate, and potential 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 of trials to additional sites. PRIME designation is a scheme provided by the EMA to enhance support for the development of medicines that target an unmet medical need. To qualify for PRIME designation, product candidates require early clinical evidence that the therapy has the potential to offer a therapeutic advantage over existing treatments or benefits patients without treatment options. We have received PRIME designation for RP- L102 for FA, RP- L201 for LAD- I, RP- L301 for PKD and RP- A501 for DD. Among the benefits of PRIME are the appointment of a rapporteur to provide continuous support and help build knowledge ahead of a marketing authorization application, early dialogue and scientific advice at key development milestones, and the potential to qualify products for accelerated review earlier in the application process. The FDA has broad discretion whether or not to grant Fast Track or RMAT designation, and the EMA has broad discretion whether or not to grant PRIME designation, so even if we believe a particular product candidate is eligible for such designations, there can be no assurance that the FDA or EMA would decide to grant it. Even if we do receive Fast Track, RMAT or PRIME designation, we may not experience a faster development process, review or approval compared to conventional development, review, and approval timelines, and receiving a Fast Track, RMAT or PRIME designation does not change the standards for the product approval. In addition, the FDA may withdraw Fast Track or RMAT designation and the EMA may revoke PRIME designation if it believes that the designation is no longer supported by data from our clinical development program. Accelerated approval by the FDA, and conditional approval by the EMA, may not lead to a faster development process or regulatory review and does not increase the likelihood that our product candidates will receive marketing approval. If we are not successful with this process, the development or commercialization of our product candidates for which we seek accelerated approval or conditional approval could be delayed, abandoned or become significantly more costly. We may seek approval of our product candidates using the FDA' s accelerated approval and the EMA' s conditional approval pathways. While we may utilize trial designs to support accelerated approval, such product candidates may not be subject to faster development or regulatory review timelines. A product may be eligible for accelerated approval by the FDA if it treats a serious or life- threatening condition, generally provides a meaningful advantage over available therapies, and demonstrates an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. As a condition of accelerated approval, the FDA may impose specific obligations with defined timelines, including to perform adequate and well- controlled post- marketing clinical trials. These confirmatory trials must be completed with due diligence. In addition, the FDA currently requires, unless otherwise informed by the agency, pre- approval of promotional materials for products receiving accelerated approval, which could adversely impact the timing of the commercial launch of a product. If the FDA or the EMA do not approve our product candidates for which we seek accelerated approval or conditional approval, but instead require the completion of a full Phase 3 clinical trial or trials prior to the filing of marketing applications, the development and commercialization timeline of such product candidates will be delayed. Even if we do receive accelerated approval or conditional approval, we may not ultimately receive full approval from the regulatory agencies. The additional data generated through post- marketing clinical trials may not confirm that the benefit- risk balance of any of our product candidates that receive accelerated approval is positive or the burden to further complete the obligations may become too high. Additionally, the Consolidated Appropriations Act of 2023, enacted on December 29, 2022, contained revisions to the accelerated approval process that provide FDA with additional authority to enforce the post- market study requirements and withdraw approvals more rapidly when holders of accelerated approvals fail to comply with post- approval clinical study requirements. In the EU, the conditional marketing authorization is subject to an annual renewal procedure that assesses the marketing authorization holder' s compliance with the specific obligations of the authorization. If conditions are not complied with, the EMA may decide to extend the timeline for the existing obligations, change the scope of such obligations or add new obligations, which may require additional financial resources and time. We may not be able to comply with such changes or additional obligations and may need to withdraw the marketing authorization. The EMA may also decide not to renew the conditional marketing authorization, although such measure is rarely applied in practice. An analysis of reimbursement decisions for conditionally authorized medicines in the EU has shown some delays in the timeline for reaching a positive health

technology recommendation. If this happens for any product candidate for which we seek conditional approval, it may delay the timing and success of the commercialization of such product. Finally, if new data obtained from fulfilment of the conditions of the conditional authorization or otherwise show that our product' s benefits no longer outweigh its risks, the EMA can take regulatory action, such as suspending or revoking the conditional marketing authorization. We have received rare pediatric disease designation for RP- A501 for DD, RP- L102 for FA, and RP- L201 for LAD- I. However, a marketing application for these product candidates, if approved, may not meet the eligibility criteria for a rare pediatric disease priority review voucher. We have received rare pediatric disease designation for RP- A501 for DD, RP- L102 for FA, and RP- L201 for LAD- I. Designation of a biological product as a product for a rare pediatric disease does not guarantee that a BLA for such biological product will meet the eligibility criteria for a rare pediatric disease priority review voucher at the time the application is approved. Under the Federal Food, Drug, and Cosmetic Act ~~(" FDCA ")~~, we will need to request a rare pediatric disease priority review voucher in our original BLA for our product candidates for which we have received rare pediatric disease designation. The FDA may determine that a BLA for any such product candidates, if approved, does not meet the eligibility criteria for a priority review voucher. The authority for the FDA to award rare pediatric disease priority review vouchers for biological products after ~~September 30~~ **December 31** , 2024 is currently limited to biological products that receive rare pediatric disease designation on or prior to ~~September 30~~ **December 20** , 2024, and FDA may only award rare pediatric disease priority review vouchers through September 30, 2026. However, it is possible the authority for FDA to award rare pediatric disease priority review vouchers will be further extended by Congress. **Even if we successfully complete the necessary preclinical studies and clinical trials, we cannot predict when, or if, we will obtain regulatory approval to commercialize a product candidate and the approval may be for a narrower indication than we seek.** We cannot commercialize a product candidate until the appropriate regulatory authorities have reviewed and approved the product candidate. We have not received approval from regulatory authorities in any jurisdiction to market any of our product candidates. Even if our product candidates meet their safety and efficacy endpoints in clinical trials, the regulatory authorities may not complete their review processes in a timely manner, issue a complete response letter, or ultimately, we may not be able to obtain regulatory approval. In addition, we may experience delays or rejections if an FDA Advisory Committee recommends disapproval or restrictions on use. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative actions, or changes in regulatory authority policy during the period of product development, clinical trials and the review process. Regulatory authorities 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 data obtained from preclinical and clinical testing could delay, limit or prevent the receipt of marketing approval for a product candidate. Regulatory authorities also may approve a product candidate for more limited indications than requested or they may impose significant limitations in the form of narrow indications, warnings or other labeling changes. These regulatory authorities may require precautions or contra- indications with respect to conditions of use or they may grant approval subject to the performance of costly post- marketing clinical trials. Regulatory authorities may impose restrictions and conditions on product distribution, prescribing, or dispensing in the form of a Risk Evaluation and Mitigation Strategy, or REMS, or equivalent requirement. In addition, regulatory authorities may not approve the labeling claims that are necessary or desirable for the successful commercialization of our product candidates. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates and materially harm our business, financial condition, results of operations and prospects. We may never obtain FDA or EMA approval for any of our product candidates in the U. S. or the EU, and even if we do, we may never obtain approval for or commercialize any of our product candidates in any other jurisdiction, which would limit our ability to realize our 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 regarding safety and efficacy on a jurisdiction- by- jurisdiction basis. Approval by the FDA in the U. S. or the EMA in the EU, if obtained, does not ensure approval by regulatory authorities in other countries or jurisdictions. In addition, preclinical studies and 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. Seeking foreign regulatory approval could result in difficulties and costs for us and require additional preclinical studies or clinical trials which could be costly and time-consuming. While the foreign regulatory approval process involves similar risks to those associated with FDA or EMA approval, regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. 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. Even if we obtain regulatory approval **for a product candidate, we will remain subject to ongoing regulatory obligations and continued regulatory scrutiny. Even if we obtain regulatory approval** in a jurisdiction, we will remain subject to ongoing regulatory obligations and continued regulatory scrutiny. The applicable regulatory authority may still impose significant restrictions on the indicated uses or marketing of our product candidates or impose ongoing requirements for potentially costly post- approval studies, post- market surveillance or patient or drug restrictions once a product candidate is approved. Additionally, 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 and must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. FDA guidance advises that patients treated with some types of gene therapy undergo follow-up observations for potential adverse events for as long as 15 years. 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. In addition, product manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP and cGTP, as well as adherence to commitments made in the BLA.

For certain commercial prescription biological products, manufacturers and other parties involved in the supply chain must also meet chain of distribution requirements and build electronic, interoperable systems for product tracking and tracing and for notifying the FDA of counterfeit, diverted, stolen and intentionally adulterated products or other products that are otherwise unfit for distribution in the U. S. If we or a regulatory agency discover previously unknown problems with a product, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product or the manufacturing facility. Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. If we fail to comply with applicable regulatory requirements following approval of any of our product candidates, a regulatory agency may take a variety of actions, including: • issuing a warning letter asserting that we are in violation of the law; • seeking an injunction or impose civil or criminal penalties or monetary fines; • suspending any ongoing clinical studies; • refusing to approve a pending marketing application, such as a BLA or supplements to a BLA submitted by us; • seizing products; or • refusing to allow us to enter into supply contracts, including government contracts. In addition, the FDA' s policies, and those of comparable foreign regulatory authorities, may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative actions, either in the U. S. or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval which we may have obtained and we may not achieve or sustain profitability, which would materially harm our business, financial condition, results of operations and prospects. If approved, our product candidates may face competition from biosimilars approved through an abbreviated regulatory pathway. The ACA includes a subtitle called the BPCIA, which created an abbreviated approval pathway for biologic products that are biosimilar to or interchangeable with an FDA- licensed reference biologic product. Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12- year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a BLA for the competing product containing the sponsor' s own preclinical data and data from adequate and well- controlled clinical trials to demonstrate the safety, purity, and potency of the other company' s product. The law is complex and, as a result, its ultimate impact, implementation, and meaning are subject to uncertainty. We believe that any of our product candidates approved as a biologic product under a BLA should qualify for the 12- year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to Congressional action or otherwise, or that the FDA will not consider our investigational medicines to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once licensed, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non- biologic products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing. If competitors are able to obtain marketing approval for biosimilars referencing our products, our products may become subject to competition from such biosimilars, with the attendant competitive pressure and consequences **. Healthcare legislative reform measures may have a material adverse effect on our business and results of operations** . The U. S. and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system that could prevent or delay marketing approval of our product candidates or any future product candidates, restrict or regulate post- approval activities and affect our ability to profitably sell any product for which we obtain marketing approval. Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling; (iii) the recall or discontinuation of our products; or (iv) additional record- keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business. See the section entitled, " Business — Government Regulation — Healthcare Legislative Reform ". Moreover, increasing efforts by governmental and third- party payors in the U. S. and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our product candidates. There has been increasing legislative and enforcement interest in the U. S. with respect to specialty drug pricing practices. Specifically, there have been several recent U. S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. We expect that additional U. S. federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that the U. S. Federal Government will pay for healthcare drugs and services, which could result in reduced demand for our drug candidates or additional pricing pressures. Individual states in the U. S. have also become increasingly active in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain drug access and marketing cost disclosure and transparency measures, and designed to encourage importation from other countries and bulk purchasing. Legally mandated price controls on payment amounts by third- party payors or other restrictions could harm our business, financial condition, results of operations and prospects. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce the ultimate demand for our drugs or put pressure on our drug pricing, which could negatively affect our business, financial condition, results of operations and prospects. The United Kingdom' s withdrawal from the EU, or Brexit, could result in increased regulatory and legal complexity, which may make it more difficult for us to do business in Europe and impose additional challenges in securing regulatory approval of our product candidates in Europe and / or the United

Kingdom. We currently have clinical trial sites in the United Kingdom, contract laboratories in the United Kingdom conducting testing for our global clinical trials, and other collaborators and potential collaborators in the United Kingdom and throughout Europe. Pursuant to Article 50 of the Treaty on EU, the UK ceased being a Member State of the EU on January 31, 2020 **.There** was a transition period during which EU pharmaceutical laws continued to apply to the UK,which expired on December 31,2020.Initially,the EU and the UK concluded a trade and cooperation agreement,or TCA,which was provisionally applicable since 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 GMP,inspections of manufacturing facilities for medicinal products and GMP documents issued but does not foresee wholesale mutual recognition of UK and EU pharmaceutical regulations. **However** ~~At present~~ , ~~Great Britain~~ **the UK** has ~~moved to implement~~ **implemented** ~~step- by- step~~ legislation on the marketing,promotion and sale of medicinal products ~~(under the Northern Ireland Protocol,the EU regulatory framework will continue to apply in Northern Ireland)~~ ,application for marketing authorizations and the application for clinical trials. ~~Therefore~~ **Accordingly** , ~~while~~ the regulatory regime in Great Britain **no longer** ~~may in part still align~~ **aligns** with EU regulations ~~,the UK has~~ **as regards** ~~now implemented new~~ regulations and administrative processes for pharmaceutical processes,including the process for obtaining marketing authorizations in the UK (through a national marketing authorization **or an IRP as described above) and,for clinical trials through the application of the UK Clinical Trial Regulation and the implementation of the combined review process by MHRA and HRA** . The cumulative effects of the disruption to the regulatory framework may add considerably to the development lead time to marketing authorization and commercialization of products in the EU and / or the United Kingdom. It is possible that there will be increased regulatory complexities which can disrupt the timing of our clinical trials and regulatory approvals. In addition, changes in, and legal uncertainty with regard to, national and international laws and regulations may present difficulties for our clinical and regulatory strategy. Risks Related to Noncompliance with Applicable Laws or ~~Regulations~~ **RegulationsIf** ~~If~~ we are successful in commercializing any product, our relationships with customers and third- party payors 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. Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any products for which we obtain regulatory approval. Our arrangements with third- party payors, healthcare providers and physicians 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 conduct our operations, including how we research, market, sell and distribute any products for which we obtain regulatory approval. See the section entitled, " Business — Government Regulation — Anti- Kickback and False Claims Laws and Other Regulatory Matters. " The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. Efforts to ensure that our business arrangements with third parties, and our business generally, 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, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations 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 administrative, civil and criminal penalties, damages, fines, disgorgement, the exclusion from participation in federal and state healthcare programs, individual imprisonment, reputational harm, and the curtailment or restructuring of our operations, as well as additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non- compliance with these laws, any of which could adversely affect our ability to operate our business and our results of operations. Defending against any such actions can be costly, time- consuming and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired. If any of the physicians or other healthcare providers or entities with whom we expect to do business are found to be not in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs. We are subject to stringent laws, rules, regulations, policies, industry standards and contractual obligations regarding data privacy and security and may be subject to additional related laws and regulations in jurisdictions into which we expand. Many of these laws and regulations are subject to change and reinterpretation and could result in claims, changes to our business practices, monetary penalties, increased cost of operations or other harm to our business. The regulatory framework for privacy and personal information security issues worldwide is evolving rapidly and likely to remain uncertain for the foreseeable future. The U. S. federal and various state, local and foreign government bodies and agencies have adopted or are considering adopting laws, rules, regulations and standards regarding, the collection, distribution, use, disclosure, storage, security and other processing of personal information. For example, HIPAA imposes specific requirements relating to the privacy, security, and transmission of individually identifiable health information. We may obtain health information from third parties, including research institutions from which we obtain clinical trial data, that are subject to privacy and security requirements under HIPAA and its implementing rules and regulations. Depending on the facts and circumstances, we could be subject to significant penalties if we obtain, use, or disclose individually identifiable health information maintained by a HIPAA- covered entity in a manner that is not authorized or permitted by HIPAA. Outside of the U. S., relevant legal requirements continue to evolve. For example, the collection and use of health data and other personal data including data collected in clinical trials is governed in the EU by the ~~General Data Protection Regulation (" GDPR ")~~ , which imposes substantial obligations upon companies and new rights for individuals. The GDPR also forms part of the law of Great Britain (England and Wales, Scotland and Northern Ireland) by

virtue of section 3 of the European Union (Withdrawal) Act 2018 and as amended by the Data Protection, Privacy and Electronic Communications (Amendments etc.) (EU Exit) Regulations 2019 (SI 2019 / 419) (" UK GDPR "). Failure to comply with the GDPR may result in fines of the higher of (i) € 20, 000, 000 or (ii) 4 % of the preceding fiscal year' s total annual global revenues of the noncompliant company, among other administrative penalties. The GDPR has increased our responsibility and liability in relation to personal data that we may process, and we may be required to implement additional measures in an effort to comply with the GDPR and with other laws, rules, regulations and standards in the EU and United Kingdom relating to privacy and data protection. This may be onerous and if our efforts to comply with GDPR or other applicable laws, rules, regulations and standards are not successful, or are perceived to be unsuccessful, it could adversely affect our business. Further, following the July 2020 Court of Justice of the EU ~~(" CJEU ")~~ decision invalidating the EU- U. S. Privacy Shield, there remains uncertainty regarding the appropriate mechanism for transferring personal data to the U. S. The ~~CJEU~~ **Court of Justice of the EU** ' s decision and other regulatory guidance or developments may impose additional obligations with respect to the transfer of personal data from the EU to the U. S., all of which could restrict our activities in those jurisdictions, limit our ability to provide our products and services in those jurisdictions, require us to modify our policies and practices, and to engage in additional contractual negotiations, or increase our costs and obligations and impose limitations upon our ability to efficiently transfer personal data from the EU to the U. S. In the U. S., a variety of data privacy, protection and security laws, rules, regulations and standards potentially may apply to our activities, such as state data breach notification laws, state personal data privacy laws (for example, the **CCPA** ~~California Consumer Privacy Act~~ of 2018 as amended by the California Privacy Rights Act effective January 1, 2023 ~~(" CCPA "))~~, state health information privacy laws, and federal and state consumer protection laws. The CCPA requires covered businesses that process personal information of California residents to disclose their data collection, use, sharing and retention practices, provides California residents with data privacy rights (including the ability to opt out of certain disclosures of personal information including for certain advertising purposes), imposes operational requirements for covered businesses, provides for significant civil penalties for violations as well as a private right of action for certain data breaches and statutory damages (that is expected to increase data breach class action litigation and result in significant exposure to costly legal judgements and settlements). Although there are limited exemptions for clinical trial data under the CCPA, the CCPA and other similar laws could impact our business activities, depending on their interpretation. Other state legislatures have enacted or are currently contemplating, and may pass, their own comprehensive data privacy and security laws, with potentially greater penalties and more rigorous compliance requirements, and laws in all 50 states require businesses to provide notice to customers whose personal data has been disclosed as a result of a data breach. Finally, federal, state and foreign laws, rules, regulations and standards may apply generally to the privacy and security of information we maintain, and may differ from each other significantly, thus complicating compliance efforts and potentially requiring us to undertake additional measures to comply with them. With HIPAA, GDPR, CCPA, and other laws, regulations and other obligations relating to privacy and data protection imposing new and relatively burdensome obligations, and with substantial uncertainty over the interpretation and application of these and other obligations, we may face challenges in addressing their requirements and making necessary changes to our policies and practices and may incur significant costs and expenses in an effort to do so. We may make public statements about our use, collection, disclosure and other processing of personal data through our privacy policies, information provided on our website and press statements. Although we endeavor to comply with our public statements and documentation, we may at times fail to do so or be alleged to have failed to do so. Any failure or perceived failure by us or our vendors or service providers to comply with our applicable policies or notices relating to privacy or data protection, our contractual or other obligations to third parties, or any of our other legal obligations, laws, rules, regulations and standards relating to privacy or data protection, may result in governmental investigations or enforcement actions, litigation, claims and other proceedings, harm our reputation, and could result in significant liability. We are subject to environmental, health and safety laws and regulations, and we may become exposed to liability and substantial expenses in connection with environmental compliance or remediation activities. Our operations, including our development, testing and manufacturing activities, are subject to numerous environmental, health and safety laws and regulations. These laws and regulations govern, among other things, the controlled use, handling, release and disposal of and the maintenance of a registry for, hazardous materials and biological materials, such as chemical solvents, human cells, carcinogenic compounds, mutagenic compounds and compounds that have a toxic effect on reproduction, laboratory procedures and exposure to blood- borne pathogens. If we fail to comply with such laws and regulations, we could be subject to fines or other sanctions. As with other companies engaged in similar activities, we face a risk of environmental liability inherent in our activities, including liability relating to releases of or exposure to hazardous or biological materials. Environmental, health and safety laws and regulations are becoming more stringent. We may be required to incur substantial expenses in connection with future environmental compliance or remediation activities, in which case, the production efforts of our third- party manufacturers or our development efforts may be interrupted or delayed. Risks Related to Manufacturing, Commercialization and Development of Our Product ~~Candidates~~ **CandidatesRisks** ~~Risks~~ Related to Manufacturing our Product **CandidatesProducts** ~~Candidates Products~~ intended for use in gene therapies are novel, complex and difficult to manufacture. We could experience production problems that result in delays in our development or commercialization programs, limit the supply of our products or otherwise harm our business. We currently have development, manufacturing, and testing agreements with third parties to manufacture supplies of certain of our product candidates. Several factors could cause production interruptions, including equipment malfunctions, facility contamination, raw material shortages or contamination, natural disasters, public health crises such as pandemics and epidemics, disruption in utility services, human error or disruptions in the operations of suppliers. Our product candidates require processing steps that are more complex than those required for small molecule pharmaceuticals. The facilities used by our contract manufacturers to manufacture our product candidates must be inspected by the FDA pursuant to pre- approval inspections that will be conducted after we submit our marketing applications to the FDA. We do not control the manufacturing process of, and will be completely dependent on, our

contract manufacturers for compliance with cGMPs in connection with the manufacture of certain of our product candidates. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to pass regulatory inspections and / or maintain regulatory compliance for their manufacturing facilities and we may need to find alternatives, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. Any problems in our manufacturing process or the facilities with which we contract could make us a less attractive collaborator for potential partners, including larger pharmaceutical companies and academic research institutions, which could limit our access to attractive development programs. Problems in third- party manufacturing processes or facilities also could restrict our ability to complete our clinical trials in a timely manner or meet market demand for our products. Additionally, should our manufacturing agreements with third parties be terminated for any reason, there may be a limited number of manufacturers who would be suitable replacements and it could take a significant amount of time to transition the manufacturing to a replacement. In some cases, the technical skills required to manufacture our products or product candidates may be unique or proprietary to the original manufacturer and we may have difficulty, or there may be contractual restrictions prohibiting us from, transferring such skills to a back- up or alternate supplier, or we may be unable to transfer such skills at all. Changes to the manufacturing process or the transfer or setup of new manufacturing facilities could require that we conduct bridging studies before being able to proceed with either clinical or commercial manufacturing activities. We may be unsuccessful in demonstrating the comparability of clinical supplies which could require the conduct of additional clinical trials. Further, the shift would likely be expensive and time- consuming, particularly since the new facility would need to comply with the necessary regulatory requirements or may require approval before selling any products manufactured at that facility. We have limited experience in manufacturing, and there can be no assurance that we will be able to manufacture products at the scale our business may require. We have historically relied on third parties to manufacture supplies of our product candidates. We have completed a build- out of a ~~new~~ manufacturing facility in Cranbury, New Jersey, and have ~~recently~~ **since** completed ~~two~~ **a limited number of** DD AAV cGMP ~~production~~ batches. Although some of our employees have experience in the manufacturing of biopharmaceutical products from prior employment at other companies, we as a company have very limited prior experience in manufacturing. As a manufacturer of pharmaceutical products, we will be required to demonstrate and maintain compliance with cGMP requirements related to production processes, quality control and assurance and recordkeeping. Furthermore, establishing and maintaining manufacturing operations may require a reallocation of other resources, particularly the time and attention of certain of our senior management as well as potentially significant capital expenditures. Any failure or delay in the development of our manufacturing capabilities could adversely impact the development or commercialization of our product candidates. **Our manufacturing facilities are subject to significant government regulations and approvals, which are often costly and could result in adverse consequences to our business if we fail to comply with the regulations or maintain the approvals.** We must comply with cGMP requirements, as set out in statute, regulations and guidance. We may encounter difficulties in achieving quality control and quality assurance and may experience shortages in qualified personnel. We are subject to inspections by the FDA and comparable agencies in other jurisdictions to confirm compliance with applicable regulatory requirements. Any failure to follow cGMP or other regulatory requirements or delay, interruption or other issues that arise in the manufacture, fill- finish, packaging, or storage of our product candidates as a result of a failure of our facilities or the facilities or operations of third parties to comply with regulatory requirements or pass any regulatory authority inspection could significantly impair our ability to develop and commercialize our product candidates, including leading to significant delays in the availability of drug product for our clinical trials or the termination or hold on a clinical trial, or the delay or prevention of a filing or approval of marketing applications for our product candidates. Significant noncompliance could also result in the imposition of sanctions, including fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approvals for our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could damage our reputation. If we are not able to maintain regulatory compliance, we may not be permitted to market our product candidates and / or may be subject to product recalls, seizures, injunctions, or criminal prosecution. Product liability lawsuits against us could cause us to incur substantial liabilities and could limit the potential commercialization of any products that we may develop. We face inherent risks of product liability exposure related to the testing of our product candidates in human clinical trials and will face even greater product liability risks if we commercially sell any approved products. Product liability claims may be brought against us by subjects enrolled in our clinical trials, patients, healthcare providers or others using, administering or selling our products. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we could incur substantial liabilities. We currently hold product liability insurance coverage at a level that we believe is customary for similarly situated companies and adequate to provide us with insurance coverage for foreseeable risks, but which may not be adequate to cover all liabilities that we may incur. 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 intend to expand our insurance coverage for products to include the sale of commercial products if we obtain regulatory approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products that receive regulatory approval. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business. Risks Related to Commercialization of our Product ~~Candidates~~ **CandidatesOur** ~~Our~~ ability to successfully develop and commercialize our product candidates will substantially depend upon the availability of reimbursement for the costs of the resulting drugs and related treatments. Sales of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be covered and paid by government authorities and other third- party payors, such as private health insurers and health maintenance organizations, which we cannot

guarantee. We have not commenced efforts to have our product candidates reimbursed by government or third- party payors. If coverage and reimbursement are not available or are available only at limited levels, we may not be able to successfully commercialize our products. If coverage is provided, but only at limited levels, the reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the reimbursement rate that the payor will pay for the product. Payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the FDA- approved products for a particular indication. A decision by a payor not to cover our product candidates could reduce physician utilization of our products once approved and have a material adverse effect on our sales, results of operations and financial condition. See the section entitled, " Business — Government Regulation — Coverage and Reimbursement. " In the U. S., the principal decisions about coverage and reimbursement for new medicines are typically made by the ~~Centers for Medicare & Medicaid Services (" CMS ")~~, an agency within the ~~U. S. Department of Health and Human Services (" HHS ")~~, as CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare. Private payors tend to follow the CMS to a substantial degree. It is difficult to predict what the CMS will decide with respect to reimbursement for fundamentally novel products such as ours, as there is no body of established practices and precedents for these new products. Factors payors consider in determining reimbursement include whether the product is a covered benefit under its health plan, whether the product is safe, effective, and medically necessary, whether it is cost- effective and whether the product is experimental or investigational. Third- party payors are increasingly limiting both coverage and the level of reimbursement of new drugs. They may also impose strict prior authorization requirements and / or refuse to provide any coverage of uses of approved products for medical indications other than those for which the FDA has granted market approvals. As a result, significant uncertainty exists as to whether and how much third- party payors will reimburse patients for their use of newly approved drugs. Net prices for drugs 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 drugs from countries where they may be sold at lower prices than in the U. S. 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. In addition, many pharmaceutical manufacturers must calculate and report certain price reporting metrics to the government, such as average sales price and best price. Further, these prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs. The manner and level at which reimbursement is provided for services related to our product candidates (e. g., for administration of our product to patients) is also important to successful commercialization of our product candidates. In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the EU provides options for its Member States to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost effectiveness of a particular product candidate to currently available therapies. A Member State may approve a specific price for the medicinal product, or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our product candidates. Historically, products launched in the EU do not follow price structures of the U. S. and generally prices tend to be significantly lower. In some cases, the reimbursement price of one Member State may have impact on the pricing level in other Member States, which may result in an incentive not to market products in some markets to prevent price reductions or erosions in other markets. We face intense competition and rapid technological change and the possibility that our competitors may develop therapies that are more advanced or effective than ours, which may adversely affect our financial condition and our ability to successfully commercialize our product candidates. We are engaged in gene therapy for severe genetic and rare diseases, which is a competitive and rapidly changing field. Although we are not currently aware of any gene therapy competitors addressing any of the same indications as those in our pipeline, we may have competitors both in the U. S. and internationally, including major multinational pharmaceutical companies, biotechnology companies and universities and other research institutions. Our potential competitors may have substantially greater financial, technical and other resources, such as larger R & D staff, more robust manufacturing capabilities and more experienced marketing and manufacturing organizations. These competitors may succeed in developing, acquiring or licensing on an exclusive basis, products that are more effective or less costly than any product candidate that we may develop, or achieve earlier patent protection, regulatory approval, product commercialization and market penetration than us. Additionally, technologies developed by our competitors may render our potential product candidates uneconomical or obsolete, and we may not be successful in marketing our product candidates against those of our competitors. In addition, if our patent rights were to expire or be successfully challenged, we could face increased litigation with respect to the validity and / or scope of patents relating to our competitors' 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, thereby causing harm to our business, financial condition, results of operations and prospects. The commercial success of any of our product candidates will depend upon the degree of market acceptance of gene therapy by physicians, patients, third- party payors and others in the medical community. Even with the requisite approvals from the FDA in the U. S., the EMA in the EU and other regulatory authorities internationally, the commercial success of our product candidates will depend, in part, on the acceptance of physicians, patients and health care payors of gene therapy products in general, and our product candidates in particular, as medically beneficial, cost- effective and safe. If any products that we commercialize do not achieve an adequate level of acceptance by physicians, patients, health care payors and others in the medical community, we may not generate significant product revenue and may not become profitable. The degree of market

acceptance of gene therapy products and our product candidates, if approved for commercial sale, will depend on several factors, including: • the efficacy and safety of such product candidates as demonstrated in preclinical studies and clinical trials; • the potential and perceived advantages of product candidates over alternative treatments, including the prevalence andseverity of any side effects; • the cost of our treatment relative to alternative treatments; • the clinical indications for which the product candidate is approved by the FDA or the EMA; • patient and physician awareness of, and willingness to seek, gene therapy; • the willingness of physicians to undergo specialized training with respect to administration of our product candidates; • product labeling or product insert requirements of the 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 clinical trials, market acceptance of the product will not be fully known until after it is approved and launched and is subject to change over time if adverse long- term follow- up data become available after approval. The failure of any of our product candidates to achieve market acceptance could materially harm our business, financial condition, results of operations and prospects. Ethical, legal, and social issues may reduce demand for any gene therapy products for which we obtain marketing approval. Prior to receiving certain gene therapies, patients may be required to undergo genetic testing. Genetic testing has raised concerns regarding the appropriate utilization and the confidentiality of information provided by genetic testing. Genetic tests for assessing a person' s likelihood of developing a chronic disease have focused public attention on the need to protect the privacy of genetic information. Concerns have been expressed that insurance carriers and employers may use these tests to discriminate on the basis of genetic information, resulting in barriers to the acceptance of genetic tests by consumers. This could lead to governmental authorities restricting genetic testing or calling for limits on or regulating the use of genetic testing, particularly for diseases for which there is no known cure. Any of these scenarios could decrease demand for any products for which we obtain marketing approval. Risks Related to Development of our Pipeline and Research and Development ~~Activities~~ **ActivitiesWe** ~~We~~ may not be successful in our efforts to expand our pipeline of additional product candidates for development. Our business model is centered on applying our expertise in rare genetic diseases by establishing focused selection criteria to develop and advance a portfolio of gene therapy product candidates through development into commercialization. We may not be able to continue to identify and develop new product candidates in addition to the pipeline of product candidates that our efforts to date have resulted in. Even if we are successful in continuing to expand our pipeline, any potential product candidates that we identify may not be suitable for clinical development. If we do not successfully identify, develop and commercialize product candidates, we will not be able to obtain product revenue in future periods, which would likely result in significant harm to our financial position and results of operations. The success of our R & D activities, clinical testing and commercialization, upon which we primarily focus, is uncertain. Our primary focus is on our R & D activities and the clinical testing and commercialization of our product candidates, and we anticipate that we will remain principally engaged in these activities for an indeterminate, but substantial, period. R & D was our most significant operating expense for the year ended December 31, ~~2023~~ **2024** . R & D activities, including the conduct of clinical studies, by their nature, preclude definitive statements as to the time required and costs involved in reaching certain objectives. Actual R & D costs, therefore, could significantly exceed budgeted amounts and estimated timeframes may require significant extension. Cost overruns, unanticipated regulatory delays or demands, unexpected adverse side effects or insufficient therapeutic efficacy will prevent or substantially slow our R & D ~~effort~~ **efforts** and our business could ultimately suffer. Risks Related to Third ~~Parties~~ **PartiesWe** ~~We~~ rely on third parties to conduct certain aspects of our preclinical studies and clinical trials and perform other tasks for us. If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or comply with regulatory requirements, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business, financial condition and results of operations could be substantially harmed. We have relied upon and plan to continue to rely upon third parties, including CROs, medical institutions, and contract laboratories for certain aspects of our ongoing preclinical and clinical programs. Nevertheless, we maintain responsibility for ensuring that each of our clinical trials and preclinical studies is conducted in accordance with the applicable protocol, legal, regulatory, and scientific standards and our reliance on these third parties does not relieve us of our regulatory responsibilities. We and our vendors are required to comply with the current requirements of GMP, ~~good clinical practice (" GCP ")~~, and ~~good laboratory practice (" GLP ")~~, which are a collection of laws and regulations enforced by the FDA, the EMA or comparable foreign authorities for our drug candidates in clinical development. Regulatory authorities enforce these regulations through periodic inspections of preclinical study and clinical trial sponsors, principal investigators, preclinical study and clinical trial sites, and other contractors. If we or any of our vendors fail to comply with applicable regulations, the data generated in our preclinical studies and clinical trials may be deemed unreliable and the FDA, the EMA or comparable foreign authorities may require us to perform additional preclinical studies and clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with GCP regulations. In addition, our clinical trials must be conducted with products produced consistent with GMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the development and regulatory approval processes. If any of our relationships with these third parties, medical institutions, clinical investigators or contract laboratories terminate, we may not be able to enter into arrangements with alternative CROs on commercially reasonable terms, or at all. In addition, our CROs are not our employees, and except for remedies available to us under our agreements with such CROs, we cannot control whether they devote sufficient time and resources to our ongoing preclinical and clinical programs. Switching or adding additional CROs, medical institutions, clinical investigators or contract laboratories involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work replacing a previous CRO. As a result, delays may occur, which can materially impact our ability to meet our desired clinical development

timelines. Though we carefully manage our relationships with our CROs, we cannot guarantee that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material adverse effect on our business, financial condition or results of operations. We may not be successful in finding strategic collaborators for continuing development of certain of our product candidates or successfully commercializing our product candidates. We may seek to establish strategic partnerships for developing and / or commercializing certain of our product candidates due to relatively high capital costs required to develop the product candidates, manufacturing constraints or other reasons. We may not be successful in our efforts to establish such strategic partnerships or other alternative arrangements for our product candidates for several reasons, including because our R & D pipeline may be insufficient, our product candidates may be deemed to be at too early of a stage of development for collaborative effort or third parties may not view our product candidates as having the requisite potential to demonstrate efficacy or market opportunity. In addition, we may be restricted under existing agreements from entering into future agreements with potential collaborators. If we are unable to reach agreements with suitable licensees or collaborators on a timely basis, on acceptable terms or at all, we may have to curtail the development of a product candidate, reduce or delay our development program, delay our potential commercialization, 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 independently fund development or commercialization activities, we may need to obtain additional expertise and additional capital, which may not be available on acceptable terms or at all. If we fail to enter into collaboration arrangements and do not have sufficient funds or expertise to undertake necessary development and commercialization activities, we may not be able to further develop our product candidates and our business, financial condition, results of operations and prospects may be materially harmed. Disruptions at the FDA and other government agencies caused by funding shortages **, Executive Orders,** or global health concerns could hinder their ability to hire, retain or deploy key leadership and other personnel, or otherwise prevent new or modified products from being developed, approved, or commercialized in a timely manner or at all, which could negatively impact our business. The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, statutory, regulatory, and policy changes, the FDA' s ability to hire and retain key personnel and accept the payment of user fees, and other events that may otherwise affect the FDA' s ability to perform routine functions. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable. **Recent Executive Orders issued by President Trump may significantly reduce the federal workforce and could adversely affect FDA' s ability to attract and retain qualified scientific reviewers which could result in longer review times for our marketing applications.** Disruptions at the FDA and other agencies may also slow the time necessary for biologics or modifications to approved biologics to be reviewed and / or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, the U. S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical employees and stop critical activities. ~~Additionally as of May 26, 2021, the FDA noted it is continuing to ensure timely reviews of applications for medical products during the COVID- 19 pandemic in line with its user fee performance goals; however, the FDA may not be able to continue its current pace and approval timelines could be extended, including where a pre- approval inspection or an inspection of clinical sites is required, due to new variants of the COVID- 19 pandemic or any future pandemic. Should FDA determine that an inspection is necessary for approval and an inspection cannot be completed during the review cycle due to restrictions on travel, and the FDA does not determine a remote interactive evaluation to be adequate, the agency could issue a complete response letter or defer action on the application until an inspection can be completed. During the COVID- 19 public health emergency, a number of companies announced receipt of complete response letters due to the FDA' s inability to complete required inspections for their applications. Regulatory authorities outside the U. S. may adopt similar restrictions or other policy measures in response to the COVID- 19 pandemic or any future pandemic and may experience delays in their regulatory activities. If the FDA becomes unable to continue its current level of performance, we could experience delays and setbacks for our product candidates and for any approvals we may seek which could adversely affect our business.~~ Risks Related to Our Intellectual ~~Property~~ **PropertyOur** ~~Our~~ rights to intellectual property for the development and commercialization of our product candidates are subject to the terms and conditions of licenses granted to us by others. We are heavily reliant upon licenses to certain patent rights and proprietary technology from third parties that are important or necessary to the development of our technology and products, including technology related to our manufacturing process and our gene therapy product candidates. These and other licenses may not provide exclusive rights to use such intellectual property and technology in all relevant fields of use and in all territories in which we may wish to license our platform or 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 not included in our licenses. Licenses to additional third- party technology that may be required for our licensing or development programs may not be available in the future or may not be available on commercially reasonable terms, or at all, which could materially harm our business and financial condition. In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain or enforce the patents, covering technology that we license from third parties. If our licensors fail to maintain such patents, or lose rights to those patents or patent applications, the rights we have licensed may be reduced or eliminated and our right to develop and commercialize any of our products that are the subject of such licensed rights could be impacted. Furthermore, the research resulting in certain of our licensed patent rights and technology was funded by the U. S. government. As a result, the government may have march- in rights, or other rights, to such patent rights and technology. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non- exclusive license authorizing the government to use the invention for non- commercial purposes. These rights may permit the government to disclose our confidential information to third parties and to exercise march- in rights to use or allow third parties

to use our licensed technology. The government can exercise its march- in rights if it determines that action is necessary because we fail to achieve practical application of the government- funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to U. S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the U. S. If we are unable to obtain and maintain patent protection for products and related technology, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to successfully commercialize our products may be harmed. Our success depends, in large part, on our ability to obtain and maintain patent protection in the U. S. and other countries with respect to our product candidates and our manufacturing technology. We and our licensors have sought to protect our proprietary position by filing patent applications in the U. S. and abroad related to many of our novel technologies and product candidates that are important to our business and may continue to do so. The patent prosecution process is expensive, time- consuming and complex. Certain patents in the field of gene therapy that may have otherwise potentially provided patent protection for certain of our product candidates may expire prior to commercial launch of our products; though we can mitigate this risk by pursuing and receiving 10 years Biologics regulatory exclusivity from the FDA, which would grant protection in later years where patent expiration may not exist. It is possible that we will fail to identify patentable aspects of our R & D output before it is too late to obtain patent protection, in part because the work of certain academic researchers in the gene therapy field has entered the public domain, which we believe precludes our ability to obtain patent protection for certain inventions relating to such work. The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has, in recent years, been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Pending and future patent applications may not result in patents being issued which protect our technology or product candidates or which effectively prevent others from commercializing competitive technologies and product candidates. While we believe our intellectual property allows us to pursue our current development programs, several companies and academic institutions are pursuing alternate approaches to gene therapy and have built intellectual property around these approaches and methods. We may not be aware of all third- party intellectual property rights potentially relating to our technology and product candidates. Publications of discoveries in the scientific literature often lag the actual discoveries, and patent applications in the U. S. and other jurisdictions are typically not published until 18 months after filing or, in some cases, not at all. Therefore, we cannot be certain that we were the first to make the inventions claimed in any owned or any licensed patents or pending patent applications, or that we were the first to file for patent protection of such inventions. Even if the patent applications we license or may own in the future do 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. Our competitors or other third parties may avail themselves of safe harbor under the Drug Price Competition and Patent Term Restoration Act of 1984 (Hatch- Waxman Amendments) to conduct research and clinical trials and may be able to circumvent our patent rights by developing similar or alternative technologies or products in a non- infringing manner. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patent rights may be challenged in the courts or patent offices in the U. S. and abroad. Such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, 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 is technology and product candidates. 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 intellectual property may not provide sufficient rights to exclude others from commercializing products similar or identical to ours. If we breach our license agreements, it could have a material adverse effect on our commercialization efforts for our product candidates. We are party to intellectual property license agreements with several entities, each of which is important to our business, and we expect to enter into additional license agreements in the future. Our patent portfolio includes a number of patents and patent applications in- licensed pursuant to those license agreements, and those agreements impose, and we expect that future license agreements will impose various diligence, development and commercialization timelines, milestone obligations, payments and other obligations on us. If we or our licensors breach any of the agreements under which we license intellectual property relating to the use, development and commercialization rights to our product candidates or technology from third parties, we could lose license rights that are important to our business. Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues. Disputes may arise between us and our licensors regarding intellectual property subject to a license agreement, including: • the scope of rights granted under the license agreement; • whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement; • our right to sublicense patent and other intellectual property rights to third parties under collaborative development relationships; • our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of is product candidates; • the 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 • whether and the extent to which inventors are able to contest the assignment of their rights to our licensors. If disputes over intellectual property that we have in- licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates. In addition, if disputes arise as to ownership of licensed intellectual property, our ability to pursue or enforce the licensed patent rights may be jeopardized. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize our products could suffer. If we are unable to protect the confidentiality of our trade secrets, our business and competitive position may be harmed. In addition to the protection afforded by patents, we rely upon unpatented trade secret protection, unpatented know- how and continuing technological innovation to develop and maintain our competitive position.

We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our contractors, collaborators, employees and consultants. Nonetheless, we may not be able to prevent the unauthorized disclosure or use of our technical know- how or other trade secrets by the parties to these agreements, however, despite the existence generally of confidentiality agreements and other contractual restrictions. Monitoring unauthorized uses and disclosures is difficult and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. If any of the contractors, collaborators, employees and consultants who are parties to these agreements breaches or violates the terms of any of these agreements, we may not have adequate remedies for any such breach or violation. As a result, we could lose our trade secrets. Enforcing a claim that a third- party illegally obtained and is using our trade secrets, like patent litigation, is expensive and time consuming and the outcome is unpredictable. In addition, courts outside the U. S. are sometimes less willing or unwilling to protect trade secrets. Our trade secrets could otherwise become known or be independently discovered by our competitors. Competitors could attempt to replicate some or all of the competitive advantages we derive from our development efforts, willfully infringe our intellectual property rights, design around our protected technology or develop their own competitive technologies that fall outside of our intellectual property rights. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, 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 our trade secrets are not adequately protected or sufficient to provide an advantage over our competitors, our competitive position could be adversely affected, as could 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 our trade secrets. We may not be successful in obtaining or maintaining necessary rights to gene therapy product components and processes for our development pipeline through acquisitions and in- licenses. We currently have intellectual property rights to develop our gene therapy product candidates, through third party licenses and our owned patents. Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in- license or use these proprietary rights. In addition, our product candidates may require specific formulations to work effectively and efficiently, and these rights may be held by others. We may be unable to acquire or in- license any compositions, methods of use, processes or other third- party intellectual property rights from third parties that we identify. The licensing and acquisition of third- party intellectual property rights is a competitive area, and a number of more established companies with greater cash resources and clinical development and commercialization capabilities are also pursuing strategies to license or acquire third- party intellectual property rights that we may consider attractive. For example, we sometimes collaborate with U. S. and foreign academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate a license to any of the institution' s rights in technology resulting from the collaboration. Regardless of such right of first negotiation for intellectual property, we may be unable to negotiate a license within the specified timeframe or under terms that are acceptable to the institution. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program. 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. If we are unable to successfully obtain rights to required third- party intellectual property rights, our business, financial condition and prospects for growth could suffer. 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, renewal fees, annuity fees and various other governmental fees on patents and / or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the U. S. in several stages over the lifetime of the patents and / or applications. We and, to our knowledge, our licensors have systems in place to remind us and them to pay these fees, and we and, to our knowledge, our licensors employ outside firms and rely on our and their respective outside counsel to pay these fees due to non- U. S. patent agencies. The USPTO and various non- U. S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We and, to our knowledge, our licensors employ reputable law firms and other professionals to help us and them comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non- compliance 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. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business. Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court. If we or one of our licensing partners initiated legal proceedings against a third- party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and / or unenforceable. In patent litigation in the U. S., defendant counterclaims alleging invalidity and / or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including patent eligible subject matter, 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 may also raise similar claims before administrative bodies in the U. S. or abroad, even outside the context of litigation. Such mechanisms include re- examination, post- grant review, and equivalent proceedings in foreign jurisdictions (e. g., opposition proceedings). Such proceedings could result in revocation or amendment to our or our licensing partners' patents in such a way that they no longer cover our product candidates. 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, of which we and the patent examiner were unaware during prosecution. Such prior

art and prior art we have disclosed to the USPTO could impact the scope or validity of certain of our patent claims. If a defendant were to prevail on a legal assertion of invalidity and / or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection would have a material adverse impact on our business. Changes in U. S. patent law or the patent law of other countries or jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products. As is the case with other biotechnology companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involves both technological and legal complexity, and therefore obtaining and enforcing biotechnology patents is costly, time-consuming, and inherently uncertain. Congress may pass patent reform legislation that is unfavorable to us. The U. S. Supreme Court has ruled on several patent cases in recent years, narrowing the scope of patent protection available in certain circumstances and weakening the rights of patent owners in certain situations. 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 patents and patents that we might obtain in the future. For example, recent court decisions raise questions regarding the award of patent term adjustment ~~(" PTA ")~~ for patents in families where related patents have issued without ~~PTA~~ **patent term adjustment** . Thus, it cannot be said with certainty how PTA will / will not be viewed in the future and whether patent expiration dates may be impacted. Similarly, changes in patent laws and regulations in other countries or jurisdictions or changes in the governmental bodies that enforce them or how they are enforced may weaken our ability to obtain new patents or to enforce patents that we have licensed or own in the future. For example, the complexity and uncertainty of European patent laws have also increased in recent years. In Europe, a new unitary patent system took effect June 1, 2023, which significantly impacts European patents, including those granted before the introduction of the system. Under the unitary patent system, European applications have the option, upon grant of a patent, of becoming a Unitary Patent subject to the jurisdiction of the ~~Unitary Patent Court (" UPC ")~~ . As the UPC is a new court system, there is no precedent for the court, increasing the uncertainty of any litigation. Patents granted before the implementation of the UPC have the option of opting out of the jurisdiction of the UPC and remaining as national patents in the UPC countries. Patents that remain under the jurisdiction of the UPC will be potentially vulnerable to a single UPC- based revocation challenge that, if successful, could invalidate the patent in all countries who are signatories to the UPC. We cannot predict with certainty the long- term effects of any potential changes. We may not be able to protect our intellectual property rights throughout the world. Filing, prosecuting, and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the U. S. can be less extensive than those in the U. S. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the U. S. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the U. S., or from selling or importing products made using our inventions in and into the U. S. or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not 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 U. S. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. 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 proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions 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 and 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 rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license. Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time. Patents have a limited lifespan. In the U. S., if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U. S. non- provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including generics or biosimilars. 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 licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours. 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 product candidates that are similar to ours but that are not covered by the claims of the patents that we own; • 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 applications 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 in- licensed intellectual property rights; • our competitors might conduct R & D 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 cannot ensure that

any of our patents, or any of our pending patent applications, if issued, or those of our licensors, will include claims having a scope sufficient to protect our product candidates; • we cannot ensure that any patents issued to us, or our licensors will provide a basis for an exclusive market for our commercially viable product candidates or will provide us with any competitive advantages; • we cannot ensure that our commercial activities or product candidates will not infringe upon the patents of others; • we cannot ensure that we will be able to successfully commercialize our product candidates on a substantial scale, if approved, before the relevant patents that we own, or license expire; • we may not develop additional proprietary technologies that are patentable; • the patents or intellectual property rights 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 challenging the inventorship or ownership of our patents and other intellectual property** . We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. We may have in the future, ownership disputes arising, for example, from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees. **As identified supra, on October 12, 2023, we filed an action against Lexeo Therapeutics, Inc., Kenneth Law, and Sonia Gutierrez asserting claims for trade secret misappropriation, breach of contract, tortious interference with contract, and unjust enrichment. Subsequently, on August 28, 2024, Lexeo asserted counterclaims against Rocket that included, inter alia, an allegation of correction of inventorship of Rocket' s issued patent, US Patent No. 11, 883, 506. The Company will vigorously defend against all counterclaims.** Risks Related to Personnel and Expansion of our **CompanyRisks** ~~Company Risks~~ Related to our **PersonnelOur business could suffer if it loses the services of, or fails to attract, key** ~~Personnel~~ **personnel .** We are highly dependent upon the efforts of our senior management, including our Chief Executive Officer, Gaurav Shah, MD; our President **, Head of R & D** and Chief Operating Officer, Kinnari Patel, PharmD, MBA; our Chief **Financial Officer, Aaron Ondrey; our Chief** Business Officer and Senior Vice President, Raj Prabhakar; ~~our Chief Medical Officer, Mark White, MB. ChB; our Vice President of Finance, Treasurer, Principal Accounting Officer and Interim Principal Financial Officer, John Militello;~~ and our General Counsel, Chief ~~Compliance~~ **Corporate** Officer and Senior Vice President, Martin Wilson. The loss of the services of these individuals and other members of our senior management could delay or prevent the achievement of research, development, marketing, or product commercialization objectives. Our employment arrangements with the key personnel are " at- will. " We do not maintain any " key- man " insurance policies on any of the key employees nor do we intend to obtain such insurance. In addition, due to the specialized scientific nature of our business, we are highly dependent upon our ability to attract and retain qualified scientific and technical personnel and consultants. There is intense competition among major pharmaceutical and chemical companies, specialized biotechnology firms and universities and other research institutions for qualified personnel in the areas of our operations, and we may be unsuccessful in attracting and retaining these personnel. 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, and commercial partners. Misconduct by these parties could include intentional failures to comply with the regulations of the FDA and non- U. S. regulators, provide accurate information to the FDA and non- U. S. regulators, comply with healthcare fraud and abuse laws and regulations in the U. S. and abroad, 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 may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct could also involve the improper use of information obtained during clinical studies, which could result in regulatory sanctions and cause serious harm to our reputation or could cause regulatory agencies not to approve our product candidates. We have a code of business ethics and conduct applicable to all employees, but it is not always possible to identify and deter employee or third- party 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 governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. 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, including the imposition of significant fines or other sanctions. We may be subject to claims that our employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers. We employ individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we endeavor to ensure that our employees, consultants, and independent contractors 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 our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employees' former employers or other third parties. 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, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and

other employees. Risks Related to Our Expansion and Growth ~~Plans~~ **PlansWe may need to expand our organization and may experience difficulties in managing this growth, which could disrupt our operations.** As our business activities expand, we may expand our full- time employee base and hire more consultants and contractors. Our management may need to divert a disproportionate amount of its attention away from day- to- day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, operational setbacks, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected our ability to generate and / or grow revenues could be reduced and we may not be able to implement our business strategy **. We may fail to realize the anticipated benefits of potential acquisitions or business combinations** . The success of acquisitions or business combinations will depend on, among other things, our ability to combine our businesses in a manner that allows us to achieve developmental and operational synergies. It is possible that the integration process could result in the loss of key employees; the disruption of our ongoing business; or inconsistencies in standards, controls, procedures, or policies, in each case, that could adversely affect our ability to achieve the anticipated benefits of the acquisition. Integration efforts between the two businesses will also divert management' s attention from our core business and other opportunities that could have been beneficial to our shareholders. An inability to realize the full extent of, or any of, the anticipated benefits of the acquisition, as well as any delays encountered in the integration process, could have an adverse effect on our business and results of operations, which may affect the value of the shares of our common stock after the completion of the acquisition. If we are unable to achieve these objectives, the anticipated benefits of the acquisition may not be realized fully or at all or may take longer or cost more to realize than expected. In particular, the acquisition or business combination may not be accretive to our stock value in the near or long term. In addition, any acquisition or business combination may impact the market price for shares of our common stock, which could result in substantial losses for our stockholders. In addition, in connection with any potential acquisition of businesses, technologies or products in the future, we could, among other things: • issue equity securities that would dilute our current stockholders' percentage ownership; • incur substantial debt that may place strains on our operations; • assume substantial actual or contingent liabilities; • reprioritize our development programs and even cease development and commercialization of certain of our product candidates; or • merge with, or otherwise enter into a business combination with, another company in which our stockholders would receive cash or shares of the other company on terms that certain of our stockholders may not deem desirable. Although we intend to evaluate and consider acquisitions, reorganizations and business combinations in the future, we have no agreements or understandings with respect to any acquisition, reorganization or business combination at this time. Future formations of strategic alliances or joint ventures with third parties could disrupt our business and harm our financial condition and operating results. We may form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such strategic alliance or joint venture, we will achieve the expected synergies to justify the transaction. The risks we face in connection with any strategic alliance or joint venture, include: • diversion of management time and focus from operating our business to addressing integration challenges; • coordination of R & D efforts; • changes in relationships with strategic partners as a result of any product acquisitions or strategic positioning; • cultural challenges associated with integrating employees; • the need to implement or improve controls, procedures, and policies at any joint venture; • liability for activities of any partnered company prior to any strategic alliance or joint venture, including intellectual property infringement claims, violation of laws, commercial disputes, tax liabilities, and other known liabilities; • unanticipated write- offs or charges; and • litigation or other claims, including claims from employees, customers, former stockholders or other third ~~parties~~ **partiesOur** ~~Our~~ failure to address these risks or other problems encountered in connection with our past or future strategic alliances could cause us to fail to realize the anticipated benefits of these transactions, cause us to incur unanticipated liabilities and harm the business generally. There is also a risk that future strategic alliances or joint ventures could result in the incurrence of debt, contingent liabilities, amortization expenses or incremental operating expenses, any of which could harm our financial condition or operating results. Given our commercial relationships outside of the U. S., in particular in the EU, a variety of risks associated with international operations could harm our business. We engage in various commercial relationships outside the U. S., and we may commercialize our product candidates outside of the U. S. In many foreign countries, it is common for others to engage in business practices that are prohibited by U. S. laws and regulations applicable to us, including the Foreign Corrupt Practices Act. Although we may implement policies and procedures specifically designed to comply with these laws and policies, there can be no assurance that our employees, contractors, and agents will comply with these laws and policies. If we are unable to successfully manage the challenges of international expansion and operations, our business and operating results could be harmed. We may be, and to the extent we commercialize our product candidates outside the U. S., expect to be subject to various risks associated with operating internationally, including: • different regulatory requirements for approval of drugs and biologics in foreign countries; • reduced protection for intellectual property rights; • unexpected changes in tariffs, trade barriers and regulatory requirements; • economic weakness, including inflation, or political instability in particular foreign economies and markets; • compliance with tax, employment, immigration, and labor laws for employees living or traveling abroad; • foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country; • workforce uncertainty in countries where labor unrest is more common than in the U. S.; • shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; • business interruptions resulting from geopolitical actions, including war and terrorism or natural disasters including earthquakes, typhoons, floods and fires, public health crises such as pandemics and

epidemics, or from economic or political instability; • compliance with foreign laws, regulations, standards, and regulatory guidance governing the collection, use, disclosure, retention, security and transfer of personal data, including the GDPR and UK GDPR; and • greater difficulty with enforcing our contracts in jurisdictions outside of the U. S. These and related risks could materially harm our business, financial condition, results of operations and prospects. 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. 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 our ~~collaborator~~ **collaborators** ' ~~s~~ or ~~partner~~ **partners** ' ~~s~~ support for our product candidates. Some of our 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 our product candidates. Any of these developments could harm our product development efforts. Risks Related to Ownership of our Common **StockFuture** ~~Stock Future~~ sales of our common stock in the public market could cause the market price of our common stock to drop significantly, even if our business is performing well. Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception or the perception that such sales may occur, could reduce the market price of our common stock. Our outstanding shares of common stock may be freely sold in the public market at any time to the extent permitted by Rules 144 and 701 under the Securities Act of 1933, as amended (the " Securities Act "), or to the extent such shares have already been registered under the Securities Act and are held by non- affiliates of ours. In addition, certain of our employees, executive officers, directors, and affiliated stockholders may enter into Rule 10b5- 1 plans providing for sales of shares of our common stock from time to time. Under a Rule 10b5- 1 plan, a broker executes trades pursuant to parameters established by the employee, director or officer when entering into the plan, without further direction from the employee, officer, director or affiliated stockholder. A Rule 10b5- 1 plan may be amended or terminated in some circumstances. Our employees, executive officers, directors and affiliated stockholders also may buy or sell additional shares outside of a Rule 10b5- 1 plan when they are not in possession of material, nonpublic information. In addition, in the future, we may issue additional shares of common stock or other equity or debt securities convertible into common stock in connection with a financing, acquisition, litigation settlement, employee arrangements or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and could cause our stock price to decline. If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline. The trading market for our common stock relies, in part, on the research and reports that industry or financial analysts publish about us or our business. Although we have obtained analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock or fail to regularly publish reports on us, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline. The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for our stockholders. Our stock price is likely to be volatile. The stock market in general, and the market for biopharmaceutical companies in particular, has experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, our stockholders may not be able to sell their shares of common stock at or above the price they paid for their shares. The market price for our common stock may be influenced by many factors, including: • results of clinical trials of our product candidates or those of our competitors; • the success of competitive products or technologies; • commencement or termination of collaborations; • regulatory or legal developments in the U. S. 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 product candidates or clinical development programs; • the results of our efforts to discover, develop, acquire or in- license additional product candidates; • actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts; • negative publicity around gene therapy in general, or our product candidates; • variations in our financial results or those of companies that are perceived to be similar to us; • changes in the structure of healthcare payment systems; • macroeconomic conditions, including inflation and rising interest rates, capital market volatility and global conflicts, including the Russia- Ukraine war, the Israel- Hamas war and the conflict between China and Taiwan; • market conditions in the pharmaceutical and biotechnology sectors; and • general economic, industry and market conditions. If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance. RTW ~~Investments, LP~~, our largest stockholder, may have the ability to significantly influence all matters submitted to stockholders for approval. RTW Investments, LP ~~(" RTW ")~~, in the aggregate, beneficially owns approximately ~~20~~ **17** . ~~21~~ **1** % of our outstanding shares of common stock. This concentration of voting power gives RTW the power to significantly influence all matters submitted to our stockholders for approval, as well as our management and affairs. For example, RTW could significantly influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. In addition, this may prevent or discourage unsolicited acquisition proposals or offers for our capital stock that you may believe are in your best interest as one of our stockholders. Because we do not anticipate paying any cash dividends on our capital stock in the

foreseeable future, capital appreciation, if any, will be stockholders' sole source of gain. We have never declared or paid cash dividends on our capital stock. We currently intend to retain all future earnings, if any, to finance the growth and development of our business. In addition, the terms of any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be stockholders' sole source of gain for the foreseeable future. General Risk ~~Factors~~ **FactorsOur** ~~Our~~ limited operating history may make it difficult for us to evaluate the success of our business to date and to assess our future viability. Our operations to date have predominantly focused on organizing and staffing our company, business planning, raising capital, acquiring our technology, administering, and expanding our gene therapy platforms, identifying potential product candidates, undertaking research, preclinical studies and clinical trials of our product candidates, building out our R & D and manufacturing capabilities, and establishing licensing arrangements and collaborations. We have not yet obtained marketing approvals, manufactured a commercial- scale product, or conducted sales and marketing activities necessary for successful commercialization. Consequently, any predictions made about our future success or viability may not be as accurate as they could be if we had a longer operating history. We are currently a drug discovery and clinical stage company and at a later point we will need to transition to a commercial stage company. We cannot guarantee that we will be successful in this transition. If we fail to maintain proper and effective internal control over financial reporting, our ability to produce accurate and timely financial statements could be impaired, which could harm our operating results, investors' views of us and, as a result, the value of our common stock. As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal control. Pursuant to Section 404 of the Sarbanes-Oxley Act (" Section 404 "), we are required to furnish a report by management on the effectiveness of our internal control over financial reporting and our independent registered public accounting firm is required to attest to the effectiveness of our internal control over financial reporting. Preparing such attestation report and the cost of compliance with reporting requirements requires significant management time. The rules governing the standards that must be met for management and our independent registered public accounting firm to assess our internal control over financial reporting are complex and require significant documentation, testing, and possible remediation. In connection with our and our independent registered public accounting firm' s evaluations of our internal control over financial reporting, we may need to upgrade systems, including information technology, implement additional financial and management controls, reporting systems, and procedures, and hire additional accounting and finance staff. Any failure to implement required new or improved controls, or difficulties encountered in their implementation, could cause us to fail to meet our reporting obligations. In addition, any testing by us or our independent registered public accounting firm conducted in connection with Section 404 may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock. We could become subject to stockholder or other third- party litigation, as well as investigations by the SEC, NASDAQ or other regulatory authorities, which could require additional financial and management resources and could result in fines, trading suspensions, payment of damages or other remedies. Further, any delay in compliance with the auditor attestation provisions of Section 404 could subject us to a variety of administrative sanctions, including ineligibility for short-form resale registration, action by the SEC and the suspension or delisting of our common stock, which could reduce the trading price of our common stock and could harm our business. **69** ~~Provisions in our corporate charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management. Provisions in our certificate of incorporation and our bylaws may discourage, delay or prevent a merger, acquisition or other change in control of our company that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our Board of Directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our Board of Directors. Among other things, these provisions: permit only the Board of Directors to establish the number of directors; require super- majority voting to amend some provisions in our restated certificate of incorporation and restated bylaws; prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders; and establish advance notice requirements for nominations for election to our board or for proposing matters that can be acted upon by stockholders at annual stockholder meetings. Moreover, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15 % of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15 % of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. Any of these provisions of our charter documents or Delaware law could, under certain circumstances, depress the market price of our common stock. Our internal computer systems, or those of our third- party collaborators or other contractors, may fail or suffer security breaches, which could result in a material disruption of our development programs. Our internal computer systems and those of our current and any future collaborators and other consultants and contractors are vulnerable to damage from computer viruses, unauthorized access, cyberattacks, data breaches, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, accident, attack or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material 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 completed or future clinical trials could result in delays in our regulatory approval efforts and significantly 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, our competitive position could be harmed, and the further development and commercialization of our product candidates could be delayed. Unfavorable national or global economic conditions or political developments could adversely affect our business, financial condition or results of operations. Our results of operations could be adversely affected by general conditions in the national or global economy and financial markets. For example, governmental statements, actions or policies, political unrest and global financial crises can cause extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, political unrest or additional global financial crises, including those resulting from the COVID- 19 pandemic and the ongoing Russia- Ukraine war, Israel- Hamas war and the conflict between China and Taiwan, could result in a variety of risks to our business, including weakened demand for our products, if approved, or our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate, further political developments and financial market conditions could adversely impact our business. The outbreak of SARS- CoV- 2, which causes COVID- 19, or other similar pandemics in the future could adversely impact our business, including our preclinical and clinical studies. As a result of the ongoing COVID- 19 outbreak, or similar pandemics, we have and may in the future experience disruptions that could severely impact our business, preclinical studies, and clinical trials, including: delays or difficulties in enrolling patients in our clinical trials; delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff; diversion of healthcare resources from the conduct of clinical trials such as patient follow- up visits, the diversion of hospitals ability to serve as our clinical trial sites and hospital staff supporting the conduct of our clinical trials; delays or difficulties in securing manufacturing slots or materials; delays or difficulties in advancing preclinical research requiring in- person laboratory work at our facility at academic partners or contract research facilities; and interruption or delays in the operations of the FDA and / or comparable foreign regulatory agencies, which may impact approval timelines.~~