Risk Factors Comparison 2025-03-27 to 2024-03-05 Form: 10-K

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

Risks Related to Our Business, Our Financial Results and Need for Additional Capital **• We are involved in multiple patent infringement lawsuits in multiple jurisdictions to protect and assert our intellectual property rights against large, well-capitalized companies, which requires that we continue to expend substantial resources, and we may not be successful in these proceedings.** • We are in the early stages of our development, and there is a limited amount of information about us upon which you can evaluate our product candidates. • We ~~will~~ **may** require substantial additional capital to fund our operations. Additional funds may be dilutive to shareholders or impose operational restrictions. Further, if additional capital is not available, we may need to delay, limit or eliminate our ~~research,~~ development and commercialization programs and modify our business strategy. • We have incurred losses in nearly every year since our inception and we anticipate that we will not achieve profits for the foreseeable future. To date, we have had no product revenues. Risks Related to Development, Clinical Testing, Regulatory Approval, Marketing, and Coverage and Reimbursement of our Product Candidates • Our product candidates are in early stages of development and must go through clinical trials, which are very expensive, time- consuming and difficult to design and implement. The outcomes of clinical trials are uncertain. • Preclinical studies and preliminary and interim data from clinical trials of our product candidates are not necessarily predictive of the results or success of ongoing or later clinical trials of our product candidates. • Because we have limited resources, we may decide to pursue a particular product candidate and fail to advance product candidates that later demonstrate a greater chance of clinical and commercial success. • Several of our current ~~preclinical studies and~~ clinical trials are being conducted outside the United States, and the FDA may not accept data from trials conducted in locations outside the United States. • We cannot guarantee how long it will take regulatory agencies to review our applications for product candidates. • **Disruptions at the FDA, including due to a reduction in the FDA' s workforce and / or inadequate funding for the FDA, could prevent the FDA from performing normal functions on which our business relies, which could negatively impact our business. •** If a particular product candidate causes undesirable side effects, then we may be unable to receive regulatory approval of or commercialize such product candidate. • We may find it difficult to enroll patients in our clinical trials, which could hinder such clinical trials. • It may take considerable time and expense to resolve the clinical hold that has been placed on our IND application of AB- 101 by the FDA, and no assurance can be given that the FDA will remove the clinical hold, in which case our business and financial prospects may be adversely affected. • ~~Several of our and our collaboration partner' s current~~ **Current** and planned clinical trials ~~have been~~ **may be** impacted ~~and could be further delayed or suspended~~ as a result of the military action by Russia in Ukraine. • Even if our product candidates obtain regulatory approval, they will remain subject to ongoing regulatory requirements. • We face significant competition from other biotechnology and pharmaceutical companies targeting HBV. • We are largely dependent on the future commercial success of our HBV product candidates. • We may incur substantial liabilities and may be required to limit commercialization of our products in response to product liability lawsuits. • Coverage and adequate reimbursement may not be available for our product candidates, which could make it difficult for us to sell our products profitably. • We are subject to United States and Canadian healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages and reputational harm. • If we participate in the Medicaid Drug Rebate Program and other governmental pricing programs, failure to comply with obligations under these programs could result in additional reimbursement requirements, penalties, sanctions and fines, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects. • Failure to comply with the United States Foreign Corrupt Practices Act, and potentially other similar global laws could subject us to penalties and other adverse consequences. Risks Related to Our Dependence on Third Parties • We depend on our license agreement with Alnylam Pharmaceuticals, Inc. for the commercialization of ONPATTRO ™ (Patisiran). • We expect to depend in part on our licensing agreements for a significant portion of our revenues for the foreseeable future and to develop, conduct clinical trials with, obtain regulatory approvals for, and manufacture, market and sell some of our product candidates. If these licensing agreements are unsuccessful, or anticipated milestone or royalty payments are not received, our business could be materially adversely affected. • We ~~will~~ depend on Qilu Pharmaceutical Co., Ltd. for the development and commercialization of imdusiran in China, Hong Kong, Macau and Taiwan. • If conflicts arise between our collaboration or licensing partners and us, our collaboration or licensing partners may act in their best interest and not in our best interest, which could adversely affect our business. • We rely on third parties to conduct our clinical trials, and if they fail to fulfill their obligations, our development plans may be adversely affected. • We rely exclusively on third parties to formulate and manufacture our product candidates, which exposes us to risks that may delay or hinder development, regulatory approval and commercialization of our products. Risks Related to Our Intellectual Property • Other entities may assert patent rights that prevent us from developing or commercializing our products. • ~~Our~~ **Certain of our** patents and patent applications ~~may be~~ **have been** challenged and ~~may be~~ found to be invalid **, and additional challenges may occur in the future** , which could adversely affect our business. • We **have incurred, and** may **in the future continue to** incur **,** substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights **, and we may not be successful in one or more of these lawsuits or proceedings, any of** which could have a material adverse effect on our business, financial condition and results of operations and could cause the market value of our common shares to decline. • Confidentiality agreements with employees and others, including collaborators, may not adequately prevent disclosure of trade secrets and other proprietary information. Risks Related to the Ownership of our Common Shares • The concentration of common share ownership will likely limit the ability of the other shareholders to influence corporate matters. • We are incorporated in Canada, with our assets located both in Canada and the United States, with

the result that it may be difficult for investors to enforce judgments obtained against us or some of our officers. • If we are deemed to be a " passive foreign investment company " for the current or any future taxable year, investors who are subject to United States federal taxation would likely suffer materially adverse United States federal income tax consequences. • Our articles and certain Canadian laws could delay or deter a change of control. General Risk Factors • **Our success depends on our new** ~~If we are unable to attract and retain qualified key~~ management **team** ~~, scientific staff, consultants~~ and ~~advisors~~ **Board of Directors** , **which is conducting a review of** our **pipeline and development** ~~ability to implement our business plan~~ **plans** ~~may be adversely affected~~ **for our hepatitis B programs** . • We could face liability from our controlled use of hazardous and radioactive materials. • Our business, reputation, and operations could suffer in the event of information technology system failures. • We may acquire other assets or businesses, or form strategic alliances or collaborations or make investments in other companies or technologies that could harm our business. PART I Item 1. Business Overview Arbutus Biopharma Corporation (" Arbutus ", the " Company ", " we ", " us ", and " our ") is a clinical- stage biopharmaceutical company ~~leveraging its extensive virology expertise to identify and~~ **focused on infectious disease. We are currently** ~~develop~~ **developing** ~~novel~~ **imdusiran (AB-729), our proprietary, conjugated GalNAc, subcutaneously- delivered RNAi** ~~therapeutics~~ **therapeutic** ~~with distinct mechanisms of action~~ , ~~which can potentially be combined to provide a functional cure~~ **and AB- 101, our proprietary oral PD-L1 inhibitor,** for ~~patients with~~ **the treatment of** chronic hepatitis B ~~virus~~ (cHBV) **. Through our ownership stake in and our license to Genevant Sciences, Ltd (Genevant), we are also focused on maximizing opportunity for our in- house developed Lipid Nanoparticle (LNP) delivery technology. We continue to protect and defend our intellectual property, which is the subject of our ongoing lawsuits against Moderna Therapeutics, Inc. (Moderna) and against Pfizer Inc. and BioNTech SE (collectively, Pfizer / BioNTech) for their use of our patented LNP delivery technology in their COVID- 19 mRNA- LNP vaccines. With respect to the Moderna lawsuit in the United States, a trial date has been set for September 24, 2025. On March 3, 2025, we announced that, along with Genevant, we have filed five international lawsuits against Moderna in connection with their use of our LNP technology in their COVID- 19 mRNA- LNP and RSV vaccines. With respect to the Pfizer / BioNTech lawsuit, the claim construction hearing occurred in December 2024. The court is expected to provide its ruling on the claim construction and issue a further scheduling order, including the date for trial, in 2025. During 2024, we streamlined the organization to focus our efforts on advancing the clinical development of imdusiran and AB- 101, and therefore ceased all discovery efforts, discontinued our IM- PROVE III clinical trial and reduced our workforce by 40 %. In the first quarter of 2025, we announced the appointment of five new members of our Board of Directors (our Board) to replace all of the former directors, as well as the appointment of a new President, Chief Executive Officer and Chairperson of our Board and a new Chief Financial Officer. Additionally, our Board took action to reduce our workforce by an additional 57 % resulting in a total workforce after reductions of 19 employees. Our Board also decided to exit our corporate headquarters in Warminster, PA and to discontinue in- house scientific research. In connection with these actions, we expect to incur a one- time restructuring charge in the first quarter of 2025 of approximately $ 11 million to $ 13 million. With these organizational changes and our ongoing cost management efforts, we expect to significantly reduce our net cash burn in 2025 when compared to 2024. Our new Board and management team are reviewing our pipeline and development plans for our hepatitis B programs. To assist with this review, we are currently retaining experts in virology, hepatitis B, and in the clinical development and approval of antiviral treatments. We expect to provide a further update once our review is complete. Strategy Our strategy is focused on maximizing opportunities for our cHBV development programs and our in- house developed LNP delivery technology. On February 28, 2022 and April 4, 2023, we filed patent infringement lawsuits in the United States against Moderna and Pfizer / BioNTech, respectively, seeking compensation for their unlicensed use of our patented technologies in their COVID- 19 mRNA- LNP vaccines. It is well established in the scientific literature that the most significant technological hurdle to developing and deploying medicines using mRNA is engineering a safe and effective way to deliver the mRNA to human cells. Scientists at Arbutus and Genevant have spent years developing and refining LNP delivery technology, which has been licensed for various applications to many different third parties. Our and Genevant' s LNP technology relies on microscopic particles built from four carefully selected types of fat- like molecules to shelter and protect RNA molecules. With this technology, the RNA can travel through the human body to a target cell and through the target cell' s membrane before releasing the RNA. Without this crucial delivery technology, the RNA would quickly degrade in the body and be ineffective. We remain committed to taking all legal actions necessary to defend and protect our intellectual property. With respect to the Moderna lawsuit, the claim construction hearing occurred on February 8, 2024. On April 3, 2024, the court provided its claim construction ruling in which it construed the disputed claim terms and agreed with our position on most of the disputed claim terms. A trial date for the Moderna lawsuit in the United States has been set for September 24, 2025. On March 3, 2025, we announced that, along with Genevant, we have filed five international lawsuits against Moderna in connection with their use of our LNP technology in their COVID- 19 mRNA- LNP and RSV vaccines. With respect to the Pfizer / BioNTech lawsuit, the claim construction hearing occurred on December 18, 2024. The court is expected to provide its ruling on the claim construction and issue a further scheduling order, including the date for trial, in 2025. cHBV programs Our current HBV strategy is to develop a functional cure for patients with cHBV** infection **with imdusiran as a potential cornerstone in a combination therapy** . We believe **that** ~~the key to success in developing~~ a ~~functional cure involves~~ **combination of compounds that can** ~~suppressing~~ **suppress** hepatitis B virus deoxyribonucleic acid (HBV DNA) ~~, reducing hepatitis B surface antigen (HBsAg) and boosting HBV- specific immune responses. Our pipeline of internally developed, proprietary compounds includes an RNAi therapeutic, imdusiran (AB- 729), and an oral PD- L1 inhibitor, AB- 101. Imdusiran has generated meaningful clinical data demonstrating an impact on both surface antigen reduction and reawakening of the HBV- specific immune response. Imdusiran is currently in two Phase 2a combination clinical trials. AB- 101 is currently being evaluated in a Phase 1a / 1b clinical trial. Strategy The two~~

~~core elements of our strategy are: 1) developing a portfolio of compounds that target HBV; and 2) combining therapeutic product candidates with complementary mechanisms of action to develop a functional cure for people with cHBV infection. We believe that a combination of compounds that can suppress HBV DNA~~ replication and HBsAg expression as well as boost patients' HBV- specific immune response could address the most important elements to achieving a functional cure. Functional cure is defined as ~~undetectable~~ **sustained HBsAg loss and** HBV DNA ~~and HBsAg levels six months after discontinuation~~ **less than the lower limit of quantification (< LLOQ) 24 weeks** ~~of~~ **off** ~~all~~ treatment **, with or without anti- hepatitis B surface antibodies (anti- HBs)** . **By providing** ~~We are developing imdusiran as~~ a ~~cornerstone in a combination therapy that also includes antivirals and immunologics. We believe that a combination therapy delivered over a finite treatment period that results in a significant increase in the~~ functional cure ~~rate (i. e. a cure rate of at least 20 %) would be a meaningful advancement~~ for patients with cHBV ~~infection~~ **, we aim to prevent complications of disease progression, to decrease HBV burden by minimizing patient stigma and address the need for finite and more efficacious HBV treatments that further improve long- term outcomes and reduce associated healthcare costs** . Our HBV product pipeline includes the following: • Imdusiran is our proprietary, conjugated GalNAc, subcutaneously- delivered RNAi therapeutic product candidate that suppresses all HBV antigens, including HBsAg expression, which is thought to be a key prerequisite to enable reawakening of a patient' s immune system to respond to HBV. Over ~~170~~ **250** patients with cHBV infection have been dosed with imdusiran in our Phase 1 and ~~ongoing~~ Phase 2a clinical trials. Clinical data generated thus far has shown imdusiran **provides meaningful reductions in HBsAg and HBV DNA and leads** to ~~be~~ **functional cure in some patients, while being** generally safe and well- tolerated ~~, while also providing meaningful reductions in HBsAg and HBV DNA~~ . • AB- 101 is our **proprietary** oral PD- L1 inhibitor that has the potential to reawaken patients' HBV- specific immune response by inhibiting PD- L1 ~~. Preclinical data in an HBV mouse model that was presented at the 2022 American Association for the Study of Liver Diseases (AASLD) Liver Meeting showed that combination treatment with AB- 101 and an HBV- targeting GalNAc- siRNA agent resulted in activation and increased frequency of HBV- specific T- cells and greater anti- HBsAg antibody production~~ . AB- 101 is currently in a Phase 1a / 1b clinical trial (AB- 101- 001) evaluating the safety, tolerability, pharmacokinetics (PK), and pharmacodynamics (PD) of single- and multiple- ascending oral doses in healthy subjects and patients with cHBV infection. ~~Our strategy is to~~ **The data from healthy subjects in Parts 1 and 2 of this clinical trial who received single and multiple doses, respectively, of AB- 101 at increasing dose levels showed that AB- 101 was generally well- tolerated with evidence of dose- dependent receptor occupancy. We have moved into Part 3 of this clinical trial which evaluates repeat dosing of AB- 101 in patients with cHBV. To help** position imdusiran as a potential cornerstone ~~therapeutic~~ in **a** combination **therapy, we fully enrolled** ~~with AB- 101 or other agents with potentially complementary mechanisms of action. We are currently conducting~~ two Phase 2a clinical trials ~~combining~~ **that combined** imdusiran with other agents. ~~Upon successful completion of our AB- 101- 001 clinical trial, we intend to initiate a Phase 2 clinical trial combining imdusiran, AB- 101 and nucleos (t) ide analogue (NA) therapy in patients with cHBV infection.~~ The intent of these trials ~~is~~ **was** to initially lower HBsAg levels with imdusiran and then administer a complementary agent, in this case an immune modulator or a therapeutic vaccine, to further lower HBsAg levels and promote anti- HBV immunity. We believe that if we can lower HBsAg and promote immunity, we may achieve ~~and sustain~~ **sustained** ~~undetectable~~ **HBsAg loss and** HBV DNA **< LLOQ** ~~and HBsAg levels~~ , potentially leading to a functional cure. Our imdusiran development program includes the following Phase 2a clinical trials: • Imdusiran in combination with Peg- IFNα- 2a **(IFN), a standard- of- care immunomodulator,** and ongoing standard- of- care **nucleoside analogue (** NA **)** therapy in patients with cHBV infection (~~AB~~ **IM** - **PROVE I** ~~729- 201~~). ~~Preliminary~~ **At the American Association for the Study of Liver Diseases (AASLD) – The Liver Meeting ® in November 2024, we presented new** data ~~reported~~ from ~~this~~ **our IM- PROVE I Phase 2a** clinical **trial showing that six doses of imdusiran and 24 weeks of IFN added to ongoing NA therapy led to a functional cure rate of 50 % (3 / 6) in HBeAg- negative patients with baseline HBsAg levels less than 1000 IU / mL, and an overall functional cure rate of 25 % (3 / 12). Those patients that achieved a functional cure also seroconverted with high anti- HBs antibody levels. These data from the IM- PROVE I** trial suggest that the ~~addition~~ **combination** of ~~Peg- IFNα- 2a to~~ imdusiran ~~treatment~~ **, 24 weeks of IFN and NA therapy** was generally **safe and** well- tolerated ~~and appears to result in continued HBsAg declines in some patients~~ . • Imdusiran in combination with VTP- 300, Barinthus Biotherapeutics plc' s (Barinthus ~~and formerly Vaccitech plc~~) ~~,~~ HBV antigen specific immunotherapy, ~~and~~ ongoing ~~standard- of- care~~ NA therapy **and including a cohort with the addition of low dose nivolumab (Opdivo ®)** in patients with cHBV infection (~~AB~~ **IM** - **PROVE II** ~~729- 202~~). ~~Preliminary~~ **At the AASLD – The Liver Meeting ® in November 2024, we presented** data ~~reported~~ from this clinical trial ~~showed~~ **showing** that ~~dosing with~~ **the addition of low dose nivolumab increased rates of HBsAg loss in cHBV patients and 23 % (3 / 13) of patients that received** imdusiran **,** ~~and then~~ VTP- 300 ~~provided a meaningful reduction of~~ **, NA therapy and low dose nivolumab achieved** HBsAg ~~levels that~~ **loss by week 48. We** are **evaluating functional cure in** ~~maintained well below baseline. In addition, a subset of~~ these patients ~~given imdusiran followed by VTP- 300 showed early signs of immune activation. We are also dosing twenty patients in an additional cohort of this clinical trial that, in addition to imdusiran and VTP- 300, includes two low doses of nivolumab (Opdivo ®), an approved PD- 1 monoclonal antibody inhibitor. • We intend to initiate an additional Phase 2a clinical trial in the first half of 2024 that will evaluate the safety, tolerability and antiviral activity of intermittent low doses of durvalumab, an approved anti- PD- L1 monoclonal antibody, in combination with imdusiran and ongoing standard- of- care NA therapy in patients with cHBV infection (AB- 729- 203). Insights gained from this clinical trial and the amended portion of the AB- 729- 202 clinical trial with nivolumab may inform dosing for our planned Phase 2 clinical trial combining imdusiran and AB- 101~~ . Background on HBV Hepatitis B is a potentially life- threatening liver infection caused by HBV. HBV can cause chronic infection which leads to a higher risk of death from cirrhosis and liver cancer. cHBV **infection** represents a significant unmet medical need. There are HBV vaccines approved by the FDA, which are indicated for the prevention of infection caused by HBV. However, the World Health Organization estimates that over ~~290~~ **250** million people worldwide suffer from cHBV infection, while other estimates

indicate that approximately 2 ~~. 4~~ million people in the United States suffer from cHBV infection. Even with the availability of effective vaccines and current treatment options, approximately ~~820, 000~~ **1. 1 million** people die every year from complications related to cHBV infection. We believe there is a compelling market opportunity for an HBV curative regimen. Currently, an estimated **32** ~~30. 4~~ million (**13** ~~10. 5~~ %) of a total of over ~~290~~ **250** million people worldwide with cHBV infection are diagnosed and approximately **7** ~~6. 6~~ million (~~2.~~ 3 %) are on treatment **. Approximately 40- 50 % of cHBV patients have baseline HBsAg < 1000 IU / mL, representing a significant subpopulation of cHBV patients who may be more responsive to emerging combination therapies** . We believe that the introduction of an HBV curative regimen with a finite duration would substantially increase diagnosis and treatment rates for people with cHBV infection. Current treatments and their limitations Today' s current treatment options for cHBV infection include ~~pegylated interferon- α regimens (Peg- IFNα - **IFN**)~~ and NA therapies. ~~Peg- IFNα - **IFN**~~ , a synthetic version of a substance produced by the body to fight infection, is administered by injection and has numerous side effects including flu- like symptoms and depression. NA therapies are oral antiviral medications which, when taken chronically, reduce HBV virus replication and inflammation and significantly reduce HBV DNA in the blood. Oral NA therapies have become the standard- of- care for HBV treatment, mainly due to their ability to drive viral load to undetectable levels in the serum of patients, their single pill once- a- day dosing and favorable safety profile. However, in most cases, once ~~Peg- IFNα - **IFN**~~ and NA therapies are stopped, virus replication resumes and liver inflammation and fibrosis may still progress. While these treatments reduce viral load, less than ~~5~~ **10** % of patients are functionally cured after a finite treatment duration. With such low cure rates, most patients with cHBV infection are required to take NA therapy daily for the rest of their lives. Our Product Candidates Our pipeline includes two product candidates that target various steps in the HBV viral lifecycle and consists of the following programs: We continue to explore expansion opportunities for our pipeline through ~~internal discovery and development activities and through~~ potential strategic alliances. RNAi therapeutic (imdusiran, AB- 729) RNAi therapeutics represent a significant advancement in drug development. RNAi therapeutics utilize a natural pathway within cells to silence genes by eliminating the disease- causing proteins that they code for. We are developing **an** RNAi ~~therapeutics~~ **therapeutic, imdusiran (AB- 729),** that ~~are~~ **is** designed to reduce HBsAg expression and other HBV antigens in people with cHBV infection. Reducing HBsAg is widely believed to be a key prerequisite to enable a patient' s immune system to reawaken and respond against the virus. Imdusiran (AB- 729) **has the following advantages over other** ~~is a subcutaneously- delivered single- trigger~~ RNAi ~~therapeutic~~ **therapeutics in development for cHBV infection: –** ~~targeted~~ **Targeted** to hepatocytes using our proprietary covalently conjugated GalNAc delivery technology **which provides highly efficient liver- targeted uptake and enables subcutaneous dosing** . ~~Imdusiran reduces~~ **– Unique nucleotide sequence that is single trigger and targets** all HBV ~~antigens~~ **transcripts including HBx from cccDNA** and **integrated DNA** ~~inhibits viral replication~~ . **– Specific chemical modifications that reduce off- target effects while maintaining potency and providing durable liver exposure. – Delivered at a low dose and less frequently. – Immune activation properties with HBV- specific T- cell immune restoration and a decrease in exhausted T- cells in key responder patients. – In combination with interferon and NA therapy,** ~~Phase~~ ~~-~~ **has** ~~1a~~ **provided the highest functional cure rates in cHBV patients to date with a 50 % (3** / **6** ~~1b single- and multiple- dose clinical trial (AB- 729- 001~~) **functional cure rate** ~~In this three- part clinical trial, we investigated the safety, tolerability, pharmacokinetics, and pharmacodynamics of single- and multiple- doses of imdusiran~~ in ~~healthy subjects and in cHBV infected~~ patients with ~~the goal of identifying the most appropriate doses and dosing intervals to take forward into Phase 2 clinical development. Data from Part 3 of the AB- 729- 001 clinical trial was presented at the 2022 European Association for the Study of the Liver (EASL) International Liver Congress ™ (ILC) and showed that repeat dosing of 60mg and 90mg of imdusiran in 41 patients resulted in robust and comparable~~ HBsAg **<** ~~declines in HBeAg positive / negative and HBV DNA positive / negative patients at week 48 (1. 89 to 2. 15 log10 decline in HBsAg). Fifty percent of the patients (16 out of 32) maintained HBsAg levels below 100~~ **1000** IU / mL **at baseline** ~~24 weeks after their last dose of imdusiran~~ . **IM** ~~Some patients treated with imdusiran experienced an increase in HBV~~ - **PROVE I** ~~specific T- cells activation and a decrease in exhausted T- cells. In this trial, imdusiran was generally safe and well- tolerated. The clinical data for imdusiran continues to support its development as a potential cornerstone agent for a curative treatment regimen for cHBV infection. The efficacy and safety data for imdusiran, derived from up to one year of dosing, supported our view that 60 mg every 8 weeks was an appropriate dose to move forward in our Phase 2a clinical trials. Our strategy is to position imdusiran as a potential cornerstone therapeutic in future HBV combinations with AB- 101 or other agents with potentially complementary mechanisms of action. To advance these efforts, we are evaluating imdusiran in~~ Phase 2a proof- of- concept ~~combination clinical trials with other agents with potentially complementary mechanisms as described below. Phase 2a proof- of- concept~~ clinical trial ~~to evaluate~~ **evaluating** imdusiran in combination with ~~Peg- IFNα - **IFN** - 2a (AB- 729- 201)~~ We have completed enrollment in **IM- PROVE I,** a randomized, open label, multicenter Phase 2a proof- of- concept clinical trial investigating the safety and antiviral activity of imdusiran in combination with **a** short ~~courses~~ **course** of ~~Peg- IFNα - **IFN** - 2a~~ and ongoing NA therapy in 43 stably NA- suppressed, HBeAg negative, non- cirrhotic patients with cHBV infection. The primary objective of this trial ~~is~~ **was** to initially lower HBsAg levels with imdusiran and then administer ~~Peg- IFNα - **IFN** - 2a~~ as an immunomodulator to promote anti- HBV immune reawakening. We believe that if we can lower HBsAg and promote immune reawakening, we may achieve ~~and sustain~~ **sustained** ~~undetectable~~ **HBsAg loss and** HBV DNA **< LLOQ** ~~and HBsAg levels~~ , potentially leading to a functional cure. After 24- weeks of dosing with imdusiran (60mg every 8 weeks **, 4 doses**) **plus ongoing NA therapy** , patients ~~are~~ **were** randomized into one of four arms to receive **a short course of IFN plus** ongoing ~~Peg- IFNα- 2a plus~~ NA therapy for either 12 or 24 weeks, with or without **an** additional **two** doses of imdusiran. After completion of the assigned ~~Peg- IFNα - **IFN** - 2a~~ treatment period, all patients ~~will remain~~ **remained** on NA therapy for the initial 24- week follow- up period, and ~~will~~ then ~~discontinue~~ **discontinued** NA treatment, provided they ~~meet~~ - **met** protocol- defined stopping criteria. Patients who ~~stop~~ **stopped** NA therapy ~~will enter~~ **entered** an intensive follow- up period for 48 weeks. **Select key** ~~At the EASL Congress in June 2023, we presented preliminary~~ data from **patients in Cohort A1 of** this **Phase 2a** clinical trial **who received 6 doses of imdusiran, 24**

weeks of IFN and ongoing NA therapy, as presented at the AASLD – The Liver Meeting ® in November 2024, include: • 50 % (3 / 6) of patients with baseline HBsAg < 1000 IU / mL achieved a functional cure. • Overall, 25 % (3 / 12) of patients achieved a functional cure. • Those patients that **achieved a functional cure also seroconverted with anti- HBs levels increasing as patients lost HBsAg. These data from the IM- PROVE I trial** ~~suggests~~ **suggest** that the ~~addition~~ **combination** of ~~Peg- IFNα- 2a to~~ imdusiran ~~treatment~~ **and 24 weeks of IFN** was generally safe ~~,~~ **and** well- tolerated ~~and~~ **. There were no serious adverse events** ~~resulted~~ **related** ~~in continued HBsAg declines in some patients~~ **to imdusiran, IFN or NA therapy, and no adverse events leading to discontinuation** . The **most common** ~~mean HBsAg decline from baseline during the~~ imdusiran ~~lead~~ **related** ~~in phase was- 1. 6 log10 at week 24 of~~ treatment ~~which is comparable to what was previously seen in other clinical trials~~ **emergent adverse events (TEAEs) were transient alanine aminotransferase elevations and injection site bruising. The IFN- related TEAEs were consistent** with ~~imdusiran. Four patients reached HBsAg below~~ the ~~lower limit~~ **known safety profile** of ~~quantitation (LLOQ) for at least one timepoint during Peg- IFNα~~ **IFN - 2a treatment** . We **are currently reviewing our pipeline and development plans** ~~expect to provide end- of- treatment data~~ for **our hepatitis B programs** ~~this clinical trial in the first half of 2024~~ . **IM- PROVE II** Phase 2a proof- of- concept clinical trial ~~to evaluate~~ **evaluating** imdusiran in combination with Barinthus' VTP- 300 ~~(AB- 729- 202)~~ Through a clinical collaboration agreement with Barinthus that we entered into in July 2021, we have completed enrollment in ~~AB~~ **IM** - **PROVE II** ~~729- 202~~ , a Phase 2a proof- of- concept clinical trial evaluating the safety, antiviral activity and immunogenicity of Barinthus' VTP- 300, an HBV antigen specific immunotherapy, administered after imdusiran in patients with cHBV infection. The initial trial design enrolled 40 NA- suppressed, HBeAg negative or positive, non- cirrhotic cHBV infected patients. The primary objective of this trial ~~is~~ **was** to initially lower HBsAg levels with imdusiran and then administer VTP- 300 as an immunomodulator to promote anti- HBV immune reawakening. ~~We believe that if we can lower HBsAg and promote immune reawakening, we may achieve and sustain undetectable HBV DNA and HBsAg levels, potentially leading to a functional cure.~~ All patients ~~will receive~~ **received** imdusiran (60mg every 8 weeks, 4 doses) plus NA therapy for 24 weeks. After week 24, treatment with imdusiran ~~will stop~~ **was stopped** . Patients ~~will continue~~ **continued** only on NA therapy and **were** ~~will be~~ randomized to receive VTP- 300 or placebo at week 26 and week 30. At week 48, all patients **were** ~~will be~~ evaluated for eligibility to discontinue NA therapy and ~~will be~~ **are being** followed for an additional 24 to 48 weeks. ~~The preliminary data from this~~ **Subsequently, we amended the IM- PROVE II** clinical trial ~~were presented at the AASLD Liver Meeting in November 2023 and included a subset of patients that received the two- dose VTP- 300 regimen (28 / 40 patients) and available follow- up data to week 48 (12 / 40 patients) and showed the following: • Robust reductions of HBsAg were seen during the imdusiran treatment period (- 1. 86 log10 mean reduction from baseline after 24 weeks of treatment). This decline in HBsAg is comparable to the declines seen with imdusiran in other clinical trials conducted to date. • 97 % of the imdusiran treated patients (33 / 34) had HBsAg < 100 IU / mL at the time of the first VTP- 300 / placebo dose. One patient reached < LLOQ with 24 weeks of imdusiran plus NA therapy alone. • VTP- 300 treatment appears to contribute to the maintenance of low HBsAg levels in the early post- treatment period, as the mean HBsAg levels in the placebo group begin to increase starting ~ 12 weeks after the last dose of imdusiran. • All VTP- 300 treated patients have maintained HBsAg < 100 IU / mL through week 48, 60 % have maintained HBsAg < 10 IU / mL, and all have qualified to stop NA therapy. • Preliminary immunology data suggests HBV- specific T- cell IFN- γ production is enhanced in patients receiving imdusiran plus VTP- 300 compared to placebo. • The preliminary safety data from this trial demonstrate that imdusiran and VTP- 300 were both safe and well- tolerated. There were no serious adverse events, Grade 3 or 4 adverse events or treatment discontinuations. End- of- treatment data from this portion of the clinical trial are expected in the first half of 2024. Additionally, we amended the AB- 729- 202** protocol to include another cohort that ~~will receive~~ **received** imdusiran, VTP- 300 **, NA therapy** and low dose nivolumab (Opdivo ®), an approved PD- 1 inhibitor. In this additional cohort, ~~approximately twenty~~ patients ~~will receive~~ **received** imdusiran (60mg every 8 weeks, 4 doses) plus NA therapy for 24 weeks, followed by administration of VTP- 300 plus up to two low doses of nivolumab while remaining on NA therapy. At week 48, all patients **were** ~~will be~~ evaluated for eligibility to discontinue NA therapy, and ~~will be~~ **are being** followed for an additional 24 to 48 weeks. ~~Preliminary~~ **The cohort that included low dose nivolumab was the best performing cohort in the IM- PROVE II clinical trial. At the AASLD – The Liver Meeting ® in November 2024, we presented** data from this **clinical trial showing that the** ~~additional~~ **addition** ~~cohort~~ **of low dose nivolumab increased rates of HBsAg loss in cHBV patients and 23 % (3 / 13) of patients that received imdusiran, VTP- 300, NA therapy and low dose nivolumab achieved HBsAg loss by week 48. We** are ~~expected~~ **evaluating functional cure** in ~~the~~ **these patients** ~~second half of 2024~~ . ~~This~~ **Treatment with imdusiran, VTP- 300, NA therapy and low dose nivolumab was generally safe and well- tolerated. There were no serious adverse events, Grade 3 or 4 adverse events or discontinuations due to adverse events. The IM- PROVE II** clinical trial is being managed by us, subject to oversight by a joint development committee comprised of representatives from both companies. We and Barinthus retain full rights to our respective product candidates and ~~will split~~ **are splitting** all costs associated with the clinical trial. Pursuant to the agreement, the parties ~~may~~ **could have** ~~undertake~~ **undertaken** a larger Phase 2b clinical trial depending on the results of the initial Phase 2a clinical trial. **However, in January 2025, Barinthus announced a shift in its strategic business focus that included postponing further development of VTP- 300 after its ongoing VTP- 300 clinical trials have concluded. The parties do not intend to undertake a larger** Phase **2b with this** ~~2a proof- of- concept clinical trial to evaluate imdusiran in~~ combination **treatment regimen.** ~~with durvalumab (AB- 729- 203)~~ Oral PD- L1 Inhibitor (AB- 101) PD- L1 inhibitors complement our pipeline of agents and could potentially be an important part of a combination therapy for the treatment of HBV by reawakening the immune system. Highly functional HBV- specific T- cells within our immune system are believed to be required for long- term HBV viral resolution. However, HBV- specific T- cells become functionally defective, and greatly reduced in their frequency during cHBV infection. One approach to boost HBV- specific T- cells is to prevent PD- L1 proteins from binding to PD- 1 and thus inhibiting the HBV- specific immune function of T- cells. Immune checkpoints such as PD- 1 / PD- L1 play an important role in the induction and maintenance of immune tolerance and in T- cell activation. AB-

101 is our **proprietary** oral **small- molecule** PD- L1 inhibitor candidate that we believe will allow for controlled checkpoint blockade while minimizing the systemic safety issues typically seen with checkpoint **inhibitor** antibody therapies. ~~Preclinical data generated thus far indicates that~~ AB- 101 ~~mediates~~ **is differentiated from monoclonal antibody checkpoint inhibitors such as durvalumab (anti- PD- L1) and nivolumab (anti- PD- 1) because it is liver centric, has a much shorter duration of effect, which may provide dosing and safety advantages, and has a novel mechanism of** ~~activation~~ ---- **action** ~~and reinvigoration of HBV~~ **as it binds to PD** ~~- specific T-~~ **L1 on the surface of** cells ~~from cHBV infected patients. In June 2022, we presented a poster at the 2022 EASL ILC highlighting data from a study that was designed to assess the preclinical activity of AB- 101 and the compound' s ability to reinvigorate patient HBV- specific T- cells. Studies were conducted using~~ **causing dimerization** ~~a transgenic MC38 tumor mouse model and peripheral blood mononuclear cells (PBMCs) from cHBV infected patients. The data presented showed that once daily oral administration of AB- 101 resulted in profound tumor reduction that was associated with T- cell activation. In addition, AB- 101 activates and reinvigorates HBV- specific T- cells in vitro. Additionally, preclinical data in an~~ **and internalization of** ~~HBV mouse model were presented at~~ the ~~2022 AASLD Liver Meeting showing that monotherapy with AB- 101 reduced~~ PD- L1 **protein followed** ~~in liver immune cells, confirming liver target engagement of the compound. Combination treatment with AB- 101 and an HBV- targeting GalNAc- siRNA agent resulted in activation and increased frequency of HBV- specific T- cells and greater anti- HBsAg antibody production. This favorable preclinical profile supports further development of AB- 101 as a therapeutic modality for cHBV infection treatment. We believe AB- 101, when used in combination with imdusiran or other approved and investigational agents, could potentially lead to a functional cure in HBV chronically infected patients. In April 2023, we received verbal communication from the FDA that the AB- 101 IND application had been placed on clinical hold. For purposes of clarity, the Phase 1 clinical trial had not been initiated and we had not dosed any patients with AB- 101. In May 2023, we received the clinical hold letter from the FDA, which raised questions about certain preclinical data and aspects of the clinical trial design. We thus decided to pursue other regulatory pathways outside of the US while evaluating our path forward with the FDA. In July 2023, the New Zealand Medicine Safety Authority (Medsafe) approved our clinical trial application (CTA) for a Phase 1 clinical trial in New Zealand for AB- 101, and we believe the protocol approved~~ by **degradation** ~~Medsafe adequately addresses the clinical trial design and safety monitoring issues raised by the FDA. We included the clinical hold letter from the FDA as part of our CTA application with~~ **within** ~~Medsafe~~ **hours** . Phase 1a / 1b clinical trial to evaluate safety, tolerability and PK / PD of AB- 101 (AB- 101- 001) **AB- 101- 001 is a** ~~We are currently dosing healthy subjects in our~~ Phase 1a / 1b clinical trial ~~for AB- 101 (AB- 101- 001). The AB- 101- 001 clinical trial is~~ designed to investigate the safety, tolerability and PK / PD of single and multiple- ascending oral doses of AB- 101 for up to 28 days in healthy subjects and patients with cHBV infection. The trial **consists of** ~~will be conducted in~~ three parts starting with single ascending doses in healthy subjects, followed by multiple ascending doses in healthy subjects and culminating with multiple doses in patients with cHBV infection. Safety and PK / PD assessments **are** ~~will be~~ performed prior to dose escalation in all parts of the clinical trial. **Part 1 of this clinical trial enrolled four sequential cohorts of eight healthy subjects each (6 active: 2 placebo) receiving a single dose of AB- 101 at increasing dose levels. The data showed that AB- 101 was well- tolerated with evidence of dose- dependent receptor occupancy. In the 25mg cohort, all five evaluable subjects showed evidence of receptor occupancy between 50- 100 %. Part 2 of this clinical trial has enrolled to date two sequential cohorts of ten healthy subjects each receiving 10 mg or 25 mg of AB- 101 (8 active: 2 placebo) daily for seven days. AB- 101 was generally well- tolerated after repeat dosing in this clinical trial with evidence of dose- dependent receptor occupancy. In the 25mg cohort, all subjects showed evidence of receptor occupancy, with seven of the eight subjects demonstrating receptor occupancy greater than 70 % during the seven- day dosing period.** We ~~are advancing~~ **have moved** into Part ~~2~~ **3** of this clinical trial which **evaluates repeat** ~~involves multiple- ascending~~ doses of AB- 101 **for 28 days** in ~~healthy subjects~~ **patients with cHBV** . ~~Preliminary data from healthy subjects in Part 1~~ **Next steps for AB- 101 will be determined after we complete our review** of **our pipeline** ~~this clinical trial, including target engagement~~ and **development plans for our hepatitis B programs** ~~receptor occupancy data, are expected in the first half of 2024~~ . Other Collaborations, Royalty Entitlements and Intellectual Property Litigation ~~Collaboration with~~ Qilu Pharmaceutical Co., Ltd. (Qilu) In December 2021, we entered into a technology transfer and license agreement (the License Agreement) with Qilu, pursuant to which we granted Qilu a sublicensable, royalty- bearing license, under certain intellectual property owned by us, which is non- exclusive as to development and manufacturing and exclusive with respect to commercialization of imdusiran, including pharmaceutical products that include imdusiran, for the treatment or prevention of hepatitis B in China, Hong Kong, Macau and Taiwan (~~the Territory~~ **Greater China and Taiwan**). In partial consideration for the rights granted by us, Qilu paid us a one- time upfront cash payment of $ 40 million on January 5, 2022 and agreed to pay us ~~milestone payments totaling~~ up to $ 245 million, net of withholding taxes, upon the achievement of certain technology transfer, development, regulatory and commercialization milestones. Qilu also agreed to pay us double- digit royalties into the low twenties percent based upon annual net sales of imdusiran in ~~the Territory~~ **Greater China and Taiwan** . The royalties are payable on a product- by- product and region- by- region basis, subject to certain limitations. Qilu is responsible for all costs related to developing, obtaining regulatory approval for, and commercializing imdusiran for the treatment or prevention of hepatitis B in ~~the Territory~~ **Greater China and Taiwan** . Qilu is required to use commercially reasonable efforts to develop, seek regulatory approval for, and commercialize at least one imdusiran product candidate in ~~the Territory~~ **Greater China and Taiwan** . A joint development committee has been established between us and Qilu to coordinate and review the development, manufacturing and commercialization plans. Both parties also have entered into a supply agreement and related quality agreement pursuant to which we will manufacture or have manufactured and supply Qilu with all quantities of imdusiran necessary for Qilu to develop and commercialize in ~~the Territory~~ **Greater China and Taiwan** until we have completed manufacturing technology transfer to Qilu and Qilu has received all approvals required for it or its designated contract manufacturing organization to manufacture imdusiran in ~~the Territory~~ **Greater China and Taiwan** . Concurrent with the execution of the License Agreement, we entered into a Share Purchase

Agreement (the Share Purchase Agreement) with Anchor Life Limited, a company established pursuant to the applicable laws and regulations of Hong Kong and an affiliate of Qilu (the Investor), pursuant to which the Investor purchased 3, 579, 952 of our common shares at a purchase price of USD $ 4. 19 per share, which was a 15 % premium on the thirty- day average closing price of our common shares as of the close of trading on December 10, 2021 (the Share Transaction). We received $ 15. 0 million of gross proceeds from the Share Transaction on January 6, 2022. The common shares sold to the Investor in the Share Transaction represented approximately 2. 5 % of our common shares outstanding immediately prior to the execution of the Share Purchase Agreement. Alnylam Pharmaceuticals, Inc. (Alnylam) and Acuitas Therapeutics, Inc. (Acuitas) We have two royalty entitlements to Alnylam' s global net sales of ONPATTRO. In 2012, we entered into a license agreement with Alnylam that entitles Alnylam to develop and commercialize products with our ~~lipid nanoparticle (~~ LNP ~~)~~ delivery technology. Alnylam' s ONPATTRO, which represents the first approved application of our LNP technology, was approved by the FDA and the European Medicines Agency (EMA) during the third quarter of 2018 and was launched by Alnylam immediately upon approval in the United States. Under the terms of this license agreement, we are entitled to tiered royalty payments on global net sales of ONPATTRO ranging from 1. 00 %- 2. 33 % after offsets, with the highest tier applicable to annual net sales above $ 500 million. This royalty interest was sold to the Ontario Municipal Employees Retirement System (OMERS), effective as of January 1, 2019, for $ 20 million in gross proceeds before advisory fees. OMERS will retain this entitlement until it has received $ 30 million in royalties, at which point 100 % of this royalty entitlement on future global net sales of ONPATTRO will revert to us. OMERS has assumed the risk of collecting up to $ 30 million of future royalty payments from Alnylam and we are not obligated to reimburse OMERS if they fail to collect any such future royalties. If this royalty entitlement reverts to us, it has the potential to provide an active royalty stream or to be otherwise monetized again in full or in part. From the inception of the royalty sale through December 31, ~~2023~~ **2024**, an aggregate of $ ~~22~~ **25**. ~~7~~ **0** million of royalties have been collected by OMERS. We also have rights to a second royalty interest ranging from 0. 75 % to 1. 125 % on global net sales of ONPATTRO, with 0. 75 % applying to sales greater than $ 500 million, originating from a settlement agreement and subsequent license agreement with Acuitas. This royalty entitlement from Acuitas has been retained by us and was not part of the royalty entitlement sale to OMERS. Genevant Sciences, Ltd. In April 2018, we entered into an agreement with Roivant Sciences Ltd. (Roivant), our largest shareholder, to launch Genevant ~~Sciences Ltd. (Genevant)~~, a company focused on ~~a broad range of RNA~~ **nucleic acid- and gene editing** - based therapeutics enabled by our LNP and ligand conjugate delivery technologies. We licensed rights to our LNP and ligand conjugate delivery platforms to Genevant ~~for RNA- based applications~~ outside of HBV, except to the extent certain rights had already been licensed to other third parties (the Genevant License). We retained all rights to our LNP and conjugate delivery platforms for HBV. Under the Genevant License, as amended, if a third **-** party sublicensee of intellectual property licensed by Genevant from us commercializes a sublicensed product, we become entitled to receive a specified percentage of certain revenue that may be received by Genevant for such sublicense, including royalties, commercial milestones and other sales- related revenue, or, if less, tiered low single- digit royalties on net sales of the sublicensed product. The specified percentage is 20 % in the case of a mere sublicense (i. e., naked sublicense) by Genevant without additional contribution and 14 % in the case of a bona fide collaboration with Genevant. Additionally, if Genevant receives proceeds from an action for infringement by any third parties of our intellectual property licensed to Genevant, we would be entitled to receive, after deduction of litigation costs, 20 % of the proceeds received by Genevant or, if less, tiered low single- digit royalties on net sales of the infringing product (inclusive of the proceeds from litigation or settlement, which would be treated as net sales). In July 2020, Roivant recapitalized Genevant through an equity investment and conversion of previously issued convertible debt securities held by Roivant. We participated in the recapitalization of Genevant with an equity investment of $ 2. 5 million. In connection with the recapitalization, the three parties entered into an Amended and Restated Shareholders Agreement that provides Roivant with substantial control of Genevant. We have a non- voting observer seat on Genevant' s Board of Directors. As of December 31, ~~2023~~ **2024**, we owned approximately 16 % of the common equity of Genevant and the carrying value of our investment in Genevant was zero. Our entitlement to receive future royalties or sublicensing revenue from Genevant was not impacted by the recapitalization. Moderna Inter Partes Review Petition On February..... to Genevant under the Genevant License. Patent Infringement Litigation vs. Moderna **United States:** On February 28, 2022, we and Genevant filed a lawsuit in the U. S. District Court for the District of Delaware against Moderna, Inc. and a Moderna affiliate (collectively, Moderna) seeking damages for infringement of U. S. Patent Nos. 8, 058, 069, 8, 492, 359, 8, 822, 668, 9, 364, 435, 9, 504, 651, and 11, 141, 378 in the manufacture and sale of MRNA- 1273, Moderna' s vaccine for COVID- 19. The patents relate to nucleic acid-lipid particles and lipid vesicles, as well as compositions and methods for their use. The lawsuit does not seek an injunction or otherwise seek to impede the sale, manufacture or distribution of MRNA- 1273. However, we seek fair compensation for Moderna' s use of our patented technology that was developed with great effort and at great expense, without which Moderna' s COVID- 19 vaccine would not have been successful. On May 6, 2022, Moderna filed a partial motion to dismiss the claims " relating to Moderna' s sale and provision of COVID- 19 vaccine doses to the U. S. Government. " On November 2, 2022, the ~~Court~~ **court** issued an Order denying Moderna' s motion. On ~~November 30, 2022, Moderna filed its Answer to the Complaint and Counterclaims. We and Genevant filed our Answer to Moderna' s Counterclaims on December 21, 2022. On~~ February 14, 2023, the U. S. Department of Justice filed a Statement of Interest in the action. On February 16, 2023, the ~~Court~~ **court** held an Initial Pretrial Conference after which it issued an Order, dated February 16, 2023, ordering that within 14 days of the issuance of the Order, the parties and the U. S. Government were to submit letters regarding the impact of the ~~Governments~~ **Government** ' **s** Statement of Interest on the scheduling of the matter. On March 10, 2023, the ~~Court~~ **court** reaffirmed its denial of Moderna' s motion to dismiss. On March 16, 2023, the ~~Court~~ **court** held a Rule 16 scheduling conference, and on March 21, 2023, the ~~Court~~ **court** issued a scheduling order in the matter without setting a trial date ~~. On June 9, 2023, the Court granted the parties' request to extend the time for claim construction briefing~~. The claim construction hearing was held on February 8, 2024. ~~According to~~ **On April 3, 2024,** the ~~Court~~ **court** ~~Scheduling Order~~ **issued its opinion regarding the claims**

construction. The court agreed with both of our positions regarding the Composition of Total Lipid (‘ 069) Patent that: (i) the claimed molar percentage (mol. %) ranges can be met by any particle and is not limited to “ finished ” particles that are not subjected to further process steps; and (ii) that the claimed mol. % ranges include standard variation based on the number of significant figures recited in the claim. The court also agreed with our position regarding the Cationic Lipid with Protonatable Tertiary Amine (‘ 378) Patent that there is no limitation as to the mol. % of the claimed cationic lipid. Regarding the Encapsulation of mRNA (‘ 651) Patent , ~~which~~ **the court held that “ wherein at least 70 % / at least 80 % / about 90 % of the mRNA in the formulation is fully encapsulated in the lipid vesicles ” means “ wherein at least 70 % / at least 80 % / about 90 % of the mRNA is fully, as distinct from partially, contained inside the lipid vesicles ”. On August 5, 2024, we and Genevant, along with Moderna, filed the Stipulation with the court that requested an amended case schedule to accommodate certain outstanding discovery from Moderna and third parties. The court approved the amended case schedule and the start of the trial** was **moved from** ~~issued on March 21, 2023, the court is expected to issue its claim construction order within 60 days of conclusion of the claim construction hearing. Expert testimony and depositions will then follow. A trial date has been set for~~ April 21, 2025 ~~and is subject~~ to ~~the~~ **September 24, 2025. International: On March 3, 2025, we and Genevant filed five international lawsuits against Moderna seeking to enforce patents protecting** ~~Court~~ -- **our patented lipid nanoparticle technology. These five lawsuits target alleged infringing activities by Moderna in 30 countries, including Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, and Turkey. We and Genevant are seeking monetary relief and injunctions against Moderna** ’ s ~~availability~~ **COVID- 19 vaccine and, where applicable, additional Moderna products, which Moderna has represented use the same lipid nanoparticle technology as the COVID- 19 vaccine, including its RSV vaccine, which recently received regulatory approval in the U. S. and European Union. Where permitted to do so at this stage, we and Genevant submitted evidence from testing of commercial Moderna product samples sourced from the U. S. and European Union indicating the samples contain lipid nanoparticles falling under the protective scope of the claims of our lipid composition patents. The five international lawsuits are as follows: • Canada: Federal Court of Canada File No. T- 704- 25, seeking a permanent injunction and damages or, if Genevant so elects, an accounting of Moderna’ s profits, attributable to infringement of Canadian Patent No. 2, 721, 333. • Japan: Tokyo District Court Case No. 2025 (Wa) 70079, seeking a permanent injunction and reasonable royalty for infringement of Japanese Patent No. 5, 475, 753. • Switzerland: a case seeking a permanent injunction and monetary relief, which upon later choice of Genevant and Arbutus can include surrender of profits, damages or a reasonable royalty, for infringement of EP 2 279 254. • Unified Patent Court (UPC): Case 10280 / 2025, seeking permanent and provisional injunctions, as well as monetary damages, which can include recovery of Moderna’ s unfair profits, from infringement of EP 2 279 254. • UPC: Case 10280 / 2025, seeking permanent and provisional injunctions, as well as monetary damages, which can include recovery of Moderna’ s unfair profits, from infringement of EP 4 241 767. The five complaints are being served on Moderna pursuant to the service of process rules of the respective courts. To date, Moderna has not responded to any of the five international lawsuits** . Patent Infringement Litigation vs. Pfizer and BioNTech On April 4, 2023, we and Genevant filed a lawsuit in the U. S. District Court for the District of New Jersey against Pfizer Inc. (Pfizer) and BioNTech SE (BioNTech) seeking damages for infringement of U. S. Patent Nos. 9, 504, 651; 8, 492, 359; 11, 141, 378; 11, 298, 320; and 11, 318, 098 in the manufacture and sale of any COVID- 19 mRNA- LNP vaccines. The patents relate to nucleic acid- lipid particles and their composition, manufacture, delivery and methods of use. The lawsuit does not seek an injunction or otherwise seek to impede the sale, manufacture or distribution of any COVID- 19 mRNA- LNP vaccines. However, we seek fair compensation for Pfizer’ s and BioNTech’ s use of our patented technology that was developed with great effort and at great expense, without which their COVID- 19 mRNA- LNP vaccines would not have been successful. On July 10, 2023, Pfizer and BioNTech filed their answer to the complaint, affirmative defenses and counterclaims. We and Genevant filed our answer to these counterclaims on August 14, 2023. A scheduling conference was held on August 28, 2023 and the ~~Court~~ **court** issued a Letter Order on September 7, 2023 setting **certain court** dates **. The** ~~up to but not including the date for a~~ claim construction hearing **occurred in December 2024** . ~~Scheduling of~~ **The court is expected to provide its ruling on** the claim construction ~~hearing~~ and ~~subsequent case dates~~ **issue a further scheduling order** , including the date for trial, **in 2025** ~~will be set at a later time that is yet to be determined~~ . **Fact** ~~Document and written~~ discovery in the action is ongoing. ~~Acuitas Declaratory Judgment Lawsuit~~ Moderna Inter Partes Review Petition On February 21,2018,Moderna Therapeutics,Inc.(Moderna) filed a petition requesting the United States Patent and Trademark Office to institute an Inter Partes Review of Arbutus United States Patent 9,404,127 (the’ 127 Patent).In its petition,Moderna sought to invalidate all claims of the patent based on Moderna’ s allegation that the claims are anticipated and / or obvious.We filed a response to Moderna’ s petition on June 14,2018.On September 12,2018,the Patent Trial and Appeal Board (the PTAB) rendered its decision to institute Inter Partes Review of the ‘ 127 Patent.The ‘ 127 Patent represents only a fraction of our extensive LNP patent portfolio.With respect to the ‘ 127 Patent,the PTAB held all claims as invalid on September 10,2019,by reason of anticipatory prior art.However **,** this decision was vacated and sent back (remanded) to the PTAB for a rehearing,pending the U.S.Supreme Court’ s (Supreme Court) decision whether to grant certiorari in a different case,United States v.Athrex,Inc.(US v.Athrex),the holding of which could impact the findings in the ‘ 127 Patent matter.The Supreme Court granted certiorari in US v.Athrex on October 13,2020 (i.e. **,** agreed to review the decision appealed from a lower court).Until the Supreme Court rendered its opinion in US v.Athrex,the ‘ 127 Patent hearing remained in abeyance,with no decision reached as to the validity of its claims.The Supreme Court decided on the US v.Athrex case on June 21,2021,following which the Federal Circuit reinstated the appeal sua sponte,requiring the parties to brief how the case should proceed in light of the Supreme Court’ s opinion or for the Appellant to waive the challenge.We elected to waive the challenge and proceed with the appeal at the Federal Circuit.The opening brief was filed on October 25,2021.Moderna’ s responsive brief was filed on February 24,2022 and

our reply brief was filed on April 26,2022.An oral hearing for this matter was held on November 4,2022.On April 11,2023,the Federal Circuit rendered its opinion,affirming the PTAB' s finding that all claims of the ' 127 Patent are invalid by reason of anticipation.Moderna and Merck European Opposition On April 5,2018,Moderna and Merck,Sharp & Dohme Corporation (Merck) filed Notices of Opposition to Arbutus' European patent EP 2279254 (the' 254 Patent) with the European Patent Office (EPO),requesting that the ' 254 Patent be revoked in its entirety for all contracting states.We filed a response to Moderna and Merck' s oppositions on September 3,2018.A hearing was conducted before the Opposition Division of the EPO on October 10,2019.At the conclusion of the hearing,the EPO upheld an auxiliary request adopting the amendment,as put forth by us,of certain claims of the ' 254 Patent.In February 2020 Moderna and Merck filed Notices of Appeal challenging the EPO' s grant of the auxiliary request.Merck filed its notice of appeal on February 24,2020 and Moderna on February 27,2020.Both Merck and Moderna perfected their appeals by filing Grounds of Appeal on April 30,2020.We filed our responses to the appeals on September 18,2020. ~~On March~~ On March **22, 2022, Moderna filed further written submissions to which we and Genevant responded in August 2022. On April** 18, ~~2022~~ **2023** , ~~Acuitas~~ we and Genevant withdrew our auxiliary request,however,the original (main) request remains in the action.We and Moderna informed the Board of Appeals that we would not object to a remittance of the matter without a hearing to the Opposition Division of the EPO.The hearing in this matter before the Board of Appeals was subsequently cancelled and resubmitted to the Opposition Division (i.e. **,** lower board) of the EPO.On October 31,2023,the Opposition Division issued a summons for oral proceedings and provided its preliminary and non- binding opinion on the subject matter to be discussed at the hearing.On November 3,2023,we responded to the summons and on January 15,2024,Moderna and Merck ~~filed~~ filed ~~a lawsuit against us and Genevant in the~~ **their** ~~U. S. District~~ **reply to the written opinion of the Opposition Division, as well as to** ~~Court~~ -- **our written submission** ~~for the Southern District~~ of ~~New York~~ **November 3** , **2023** ~~asking the court to enter declaratory judgment that Arbutus patent Nos~~ . **We responded to Moderna** ~~8, 058, 069, 8, 492, 359, 8, 822, 668, 9, 006, 417, 9, 364, 435, 9, 404, 127, 9, 504, 651, 9, 518, 272,~~ and **Merck** ~~11, 141, 378 do not infringe Pfizer and BioNTech~~ ' s ~~COVID- 19 vaccine~~ **reply on April 5** , **2024** ~~COMIRNATY, which uses an mRNA lipid provided, under license, by Acuitas~~ . **Oral proceedings were held on** ~~Acuitas also seeks a declaration that each of the listed patents is invalid. On~~ June **6, 2024, and the Opposition Division upheld the '** ~~24~~ **254 Patent** ~~, 2022, we and Genevant sought a pre- motion conference concerning our anticipated motion to dismiss all of Acuitas' claims due to lack of subject matter jurisdiction. The request for a pre- motion conference was granted,~~ but **declined** ~~the case was subsequently re- assigned to a new judge who entered an order directing: (i) Acuitas to inform the court whether it intended to file an amended complaint; (ii) that Acuitas must file any amended complaint by a certain date; and (iii) that if Acuitas did not file an amended complaint, we and Genevant must file our motion to dismiss by a certain date. Acuitas filed its amended complaint on September 6, 2022. On October 4, 2022, we and Genevant filed our motion to dismiss the Acuitas action for lack of subject matter jurisdiction based on the lack of a case or controversy. Acuitas filed its opposition to the motion to dismiss on November 1, 2022, and we and Genevant filed our reply brief on November 16, 2022 at which point the motion was fully briefed. A status conference for the action was set for August 9, 2023, however on August 4, 2023, Acuitas voluntarily dismissed its complaint in the Southern District of New York and refiled a virtually identical complaint in the District Court of New Jersey (D. N. J.) where the Pfizer / BioNTech matter is currently pending, except that the 9, 404, 127 patent is not at issue in the New Jersey action, and Acuitas also added two additional patents to its New Jersey declaratory judgment action ((U. S. Patent Nos. 11, 298, 320 and 11, 318, 098) that were not at issue in its New York action. On September 15, 2023, we and Genevant filed a letter with the Court seeking a premotion conference for a motion to dismiss and subsequently filed~~ our and Genevant' s ~~motion~~ **request** to ~~dismiss~~ **broaden certain claims in the ' 254 Patent. Both parties appealed the Opposition Division' s decision and** on ~~October 13~~ **March 21** , ~~2023~~ **2025** ~~. Acuitas filed its opposition on November 1~~ , **the Board of Appeals scheduled oral proceedings for January 15 and 16,** ~~2023~~ **2026** ~~and~~ **. While** we ~~and~~ **are the patent holder, the ' 127 Patent, the ' 254 Patent, the other patents in our LNP portfolio have been licensed to** Genevant ~~filed our reply on November 16, 2023. Acuitas filed a request to commence discovery on November 18, 2023, to which we~~ and **are included in the rights licensed by us to** Genevant **under** ~~responded on November 20, 2023. A ruling on~~ the **Genevant License** ~~motion to dismiss, which is expected to be decided on the papers, has not yet issued. Discovery has not yet commenced in this action~~ . Potential Additional Payments Related to the Acquisition of Enantigen Therapeutics, Inc. In October 2014, Arbutus Inc., our wholly- owned subsidiary, acquired all of the outstanding shares of Enantigen Therapeutics, Inc. (Enantigen) pursuant to a stock purchase agreement. The amount paid to Enantigen' s selling shareholders could be up to an additional $ 102. 5 million in sales performance milestones in connection with the sale of the first commercialized product by us for the treatment of HBV, regardless of whether such product is based upon assets acquired under this **stock purchase** agreement, and a low single- digit royalty on net sales of such first commercialized HBV product, up to a maximum royalty payment of $ 1. 0 million that, if paid, would be offset against our performance milestone payment obligations. Patents and Proprietary Rights Our commercial success depends in part on our ability to obtain and maintain proprietary protection for our product candidates, novel discoveries, product development technologies and other know- how, to operate without infringing on the proprietary rights of others and to prevent others from infringing our proprietary rights. Our policy is to seek to protect our proprietary position by, among other methods, filing or in licensing United States and foreign patents and patent applications related to our proprietary technology, inventions and improvements that are important to the development and implementation of our business. We also rely on trademarks, trade secrets, know how, continuing technological innovation and potential in licensing opportunities to develop and maintain our proprietary position. In addition to our proprietary expertise, we own a portfolio of patents and patent applications directed to ~~HBV core / capsid protein assembly inhibitors~~ **RNAi drugs and processes directed at particular disease indications** , **chemical modification of RNAi molecules** ~~HBV surface antigens secretion inhibitors, coronavirus main protease inhibitors~~ , LNP inventions, LNP compositions for delivering nucleic acids such as mRNA and RNAi, **and** the formulation and manufacture of LNP- based pharmaceuticals ~~, chemical modification of RNAi molecules, and RNAi drugs and processes~~

~~directed at particular disease indications~~. In the United States our patents might be challenged by inter partes review or opposition proceedings. In Europe, upon grant, a period of nine months is allowed for notification of opposition to such granted patents. If our patents are subjected to inter partes review or opposition proceedings, we would incur significant costs to defend them. Further, our failure to prevail in any such proceedings could limit the patent protection available to our therapeutic HBV programs, coronavirus programs or RNAi platform, including our product candidates. We own **many** ~~more than 55~~ patent families related to our compounds, formulations, and technology, but we cannot be certain that issued patents will be enforceable or provide adequate protection or that pending patent applications will result in issued patents. The following table shows the estimated expiration dates, based on filing dates of pending patent applications, in the United States and the European Union for the primary patents for our product candidates currently in clinical trials. Product candidateEstimated Patent Expiration in USEstimated Patent Expiration in EUImdusiran20382038AB- ~~10120422042~~ **10120422042LNP20292029** Human Capital Employee Composition As of December 31, ~~2023~~ **2024**, we had ~~73~~ **44** full- time employees ~~, 51~~ **. In the first quarter** of **2025** ~~whom were engaged in research and development~~, ~~including~~ **our Board took action** ~~two~~ - **to reduce our** ~~medical doctors, 28 individuals with Doctors of Philosophy (PhD) degrees, and another 21 individuals with Master of Science degrees. Our~~ workforce ~~is 50~~ **by 57** % ~~female and 31 %~~ **resulting in a total workforce after reductions** of ~~our~~ **19** employees ~~holding a position of vice president or higher are female~~. None of our employees are represented by a labor union or covered by a collective bargaining agreement, nor have we experienced any work stoppages. We believe that relations with our employees are good. We supplement our in- house expertise with outsourced capabilities when it would be cost prohibitive to build our own in-house capabilities. For example, we outsource a substantial portion of our clinical trial work to clinical research organizations and a majority of our drug manufacturing is out- sourced to contract manufacturers. Our in- house clinical development and manufacturing teams implement our development strategies and oversee the activities of our outside vendors. Employee Oversight, Training and Development We are invested in the professional development of our employees. In order to promote long- term retention and to maximize the potential of our employees, we provide individualized performance management programs. We also offer needs- based supplemental training **as well as mandatory compliance training** to our employees. In order to monitor employee satisfaction and as well to identify ways in which employee satisfaction and engagement can be improved, we also survey our employees on ~~a regular~~ **an annual** basis, reporting the results of the surveys to management and to our ~~board~~ **Board** ~~of directors~~. We continue to score ~~very~~ well on our employee surveys and our voluntary employee turnover remains well under industry average based on market data. Compensation and Benefits Drug development is a complex endeavor that requires deep expertise and attracting and retaining qualified employees for specialized biopharmaceutical positions. Our compensation programs are designed to attract and retain top talent. We offer every employee a total compensation package consisting of base salary, cash target bonus targeting the 50th to 75th percentile of market based on company size and industry, a comprehensive benefit package, including medical, dental and vision health care coverage, a 401 (k) plan with an employer match, tax- advantaged savings accounts and equity compensation for every employee, which includes stock options and restricted stock units. We also provide eligible employees the opportunity to participate in our employee stock purchase plan and our employee rewards and recognition programs. In addition, we provide our employees with wellness programs and we offer mental health support to our employees and dependents. Work- life Balance We aim to ensure our employees maintain a work- life balance by offering 25 paid days of time- off, 12 days of paid holidays, and we shut down in the last week of December. We provide paid parental leave to both birth and adoptive parents. In addition, we allow our employees to have a flexible work schedule and, to the extent possible, depending on the nature of the work, remote and hybrid work arrangements. ~~We believe our focus on total rewards and work- life balance contributed to our having been named one of Philadelphia Business Journal' s Best Places to Work in 2022, a prestigious award that is based on employee survey results.~~ Environmental, Social and Governance We are a pre- commercial company ~~of~~ **engaged in clinical development with** less than **fifty** ~~one hundred~~ employees ~~, engaged in research and development~~. Manufacturing activities to support these activities is almost entirely outsourced and biohazardous and chemical waste disposal is handled by third ~~-~~ party vendors. Although our environmental footprint is subsequently small, we regularly review and evaluate our energy use to identify ways in which we can maximize efficiencies and minimize waste. The culture at Arbutus reflects our commitment to our employees, to our community, and to making a meaningful contribution to world health. We are active in community outreach and **contribute to** ~~participate in many~~ local charities serving underserved communities in the ~~Philadelphia~~ **Buck County, Pennsylvania** area ~~, including partnering with Life Sciences Cares Philadelphia~~. Safety in the Workplace We strive to provide a productive and safe working environment for our employees. To protect the health and safety of our employees, we have a Health and Safety Committee, officially certified by the Pennsylvania Department of Labor and Industry- Bureau of Workers Compensation, which is committed to the principles of leadership, responsibility, prevention, and compliance. We follow all recognized Environmental Health and Safety standards and management systems. We have also established an Occupational Health and Safety policy and related standard operating procedures, all of which are used to train our employees in the proper procedures for the workplace. We also solicit employee and contractor recommendations to improve on the safety of our working conditions. **Our efforts resulted in zero reportable workplace injuries in 2024.** Diversity, Equity and Inclusion Our commitment to diversity and inclusion is demonstrated by our placement of ultimate responsibility for diversity, equity and inclusion with our ~~board~~ **Board** ~~of directors~~, informed by the recommendations of management and ~~the~~ **our** ~~board~~ **Board**' s Nominating and Governance Committee. Our Code of Business Conduct (the Code of Conduct) prohibits discrimination and harassment of any kind, including discrimination or harassment based on age, race, ~~ethnicity~~ **national origin, color**, religion, gender **identity or expression, pregnancy status**, sexual ~~preference~~ **orientation, genetic information** and disability. In addition to our anti- harassment and human rights policies, we also require mandatory annual training in unconscious bias and anti- harassment. ~~Some of the diversity and inclusion initiatives at Arbutus include the formation of a Diversity and Inclusion Committee comprised of Arbutus employees and the broadening of the geographical reach of our recruitment efforts. We also~~

~~celebrate Juneteenth as a corporate holiday.~~ Our Contribution to World Health We are dedicated to meaningfully contributing to world health. We are pursuing the mission of ~~finding~~ **developing** a functional cure for hepatitis B viral infections, an unmet medical need affecting over ~~290~~ **250** million people worldwide. As stated in our Code of Conduct, we are committed to complying with all applicable laws, rules and regulations not just in the United States and Canada, but in all the countries in which we operate. In addition to mandating training on our Code of Conduct on an annual basis, we also provide annual training on insider trading, anti- bribery and anti- corruption, among other topics. In addition, we require our suppliers' agreements to comply with anti- bribery and anti- fraud provisions, and to comply with all applicable laws. All vendors also receive our Code of Conduct at the time of their engagement with us. We comply with all applicable regulations in conducting clinical trials, including FDA ethical regulations, the Declaration of Helsinki and the International Conference on Harmonisation- good Clinical Practices (ICH- GCP). Competition We face a broad range of current and potential competitors, from established global pharmaceutical companies with significant resources, to research- stage companies. In addition, we face competition from academic and research institutions and government agencies for the discovery, development and commercialization of novel therapeutics to treat HBV. Many of our competitors, either alone or with their collaborative partners, have significantly greater financial, product development, technical, manufacturing, sales, and marketing resources than we do. In addition, many of our direct competitors are large pharmaceutical companies with internal research and development departments that have significantly greater experience in testing product candidates, obtaining FDA and other regulatory approvals of product candidates, and achieving widespread market acceptance for those products. As a significant unmet medical need exists for HBV, there are several large and small pharmaceutical companies focused on delivering singular or combinations of therapeutics for the treatment of HBV. These companies include, but are not limited to, GlaxoSmithKline, ~~Roche, Vir Biotechnology,~~ Gilead Sciences, Assembly, ~~Enanta Pharmaceuticals,~~ Aligos Therapeutics, ~~Barinthus~~ **Bluejay Therapeutics** , ~~Aseletis Pharma~~ **Inc., AusperBio Therapeutics** , Inc. and Brii Biosciences Ltd. These companies are developing products such as antisense oligonucleotides, capsid inhibitors, RNAi therapeutics, immune modulators and surface antigen inhibitors. These product candidates are in various stages of preclinical and clinical development. Further, in addition to current investigational therapeutics in development, it is likely that additional drugs will become available in the future for the treatment of HBV. We anticipate that we will face competition as new products enter the marketplace. Our competitors' products may be safer, more effective, or more effectively marketed and sold than any product we may commercialize. Competitive singular or combination products may render one or more of our product candidates obsolete or non- competitive before we can recover the expenses of developing and commercializing any of our product candidates. It is also possible that the development of a cure or new treatment methods for HBV could render one or more of our product candidates non- competitive, obsolete, or reduce the demand for our product candidates. We believe that our ability to compete depends, in part, upon our ability to develop products, successfully complete the clinical trials and regulatory approval processes, and effectively market any approved products. Further, we need to attract and retain qualified personnel, obtain patent protection or otherwise develop proprietary product candidates or processes, and secure sufficient capital resources for the substantial time period between the discovery of lead compounds and their commercial sales, if any. We currently rely on third- party manufacturers to supply drug substance and drug products, including imdusiran and AB- 101, for our ongoing and anticipated clinical trials and non- clinical studies. We currently have no plans to establish any large- scale internal manufacturing facilities for our product candidates. Government Regulation Regulation by governmental authorities in the United States and in other countries is a significant consideration in our product development, manufacturing and, if our product candidates are approved, marketing strategies. We expect that all our product candidates will require regulatory approval by the FDA and by similar regulatory authorities in foreign countries prior to commercialization and will be subjected to rigorous preclinical, clinical, and post- approval testing to demonstrate safety and effectiveness, as well as other significant regulatory requirements and restrictions in each jurisdiction in which we would seek to market our products. In the United States, we are subject to extensive regulation by the FDA and other federal, state, and local regulatory agencies. United States federal laws, such as the Federal Food, Drug, and Cosmetic Act (FD & C Act), and regulations issued thereunder, govern the testing, development, manufacture, quality control, safety, effectiveness, approval, storage, labeling, record keeping, reporting, distribution, import, export, sale, and marketing of all biopharmaceutical products intended for therapeutic purposes. We believe that we and the third parties that work with us are in compliance in all material respects with currently applicable laws, rules and regulations; however, any failure to comply could have a material negative impact on our ability to successfully develop and commercialize our products, and therefore on our financial performance. In addition, the laws, rules and regulations that apply to our business are subject to change and it is difficult to foresee whether, how, or when such changes may affect our business. Obtaining governmental approvals to market our product candidates and maintaining ongoing compliance with applicable federal, state, local and foreign statutes and regulations following any such approvals will require the expenditure of significant financial and human resources. Development and Approval The process to develop and obtain approval for biopharmaceutical products for commercialization in the United States and many other countries is lengthy, complex and expensive, and the outcome is far from certain. Although foreign requirements for conducting clinical trials and obtaining approval may differ in certain respects from those in the United States, there are many similarities and they often are equally rigorous, and the outcome cannot be predicted with confidence. A key component of any submission for approval in any jurisdiction is preclinical and clinical data demonstrating the product candidate' s safety and effectiveness. Preclinical Testing. Before testing any product candidate in humans in the United States, a company must develop preclinical data, generally including laboratory evaluation of the product candidate' s chemistry and formulation, as well as toxicological and pharmacological studies in animal species to assess safety and quality. Certain types of animal studies must be conducted in compliance with the FDA' s Good Laboratory Practice (GLP) regulations and the Animal Welfare Act, which is enforced by the Department of Agriculture. IND Application. A person or entity sponsoring clinical trials in the United States to evaluate a product candidate' s safety and effectiveness must submit to the FDA, prior to commencing such trials, an investigational new

drug (IND) application, which contains, among other data and information, preclinical testing results and provides a basis for the FDA to conclude that there is an adequate basis for testing the drug in humans. If the FDA does not object to the IND application within 30 days of submission, the clinical testing proposed in the IND may begin. Even after the IND has gone into effect and clinical testing has begun, the FDA may put the clinical trials on " clinical hold, " suspending (or in some cases, ending) them because of safety concerns or for other reasons. Clinical Trials. Clinical trials involve administering a product candidate to human volunteers or patients under the supervision of a qualified clinical investigator. Clinical trials are subject to extensive regulation. In the United States, this includes compliance with the FDA' s bioresearch monitoring regulations and current good clinical practices (GCP) requirements, which establish standards for conducting, recording data from, and reporting the results of clinical trials, with the goals of assuring that the data and results are credible and accurate and that study participants' rights, safety and well- being are protected. Each clinical trial must be conducted under a protocol that details, among other things, the study objectives and parameters for monitoring safety and the efficacy criteria, if any, to be evaluated. The protocol is submitted to the FDA as part of the IND and reviewed by the agency. Additionally, each clinical trial must be reviewed, approved and conducted under the auspices of an Institutional Review Board (IRB). The sponsor of a clinical trial, the investigators and IRBs each must comply with requirements and restrictions that govern, among other things, obtaining informed consent from each study subject, complying with the protocol and investigational plan, adequately monitoring the clinical trial, and timely reporting ~~AEs~~ **adverse effects** . Foreign studies conducted under an IND must meet the same requirements applicable to studies conducted in the United States. However, if a foreign study is not conducted under an IND, the data may still be submitted to the FDA in support of a product application, if the study was conducted in accordance with GCP and the FDA is able to validate the data. The sponsor of a clinical trial or the sponsor' s designated responsible party may be required to register certain information about the trial and disclose certain results on government or independent registry websites, such as clinicaltrials. gov. Clinical testing is typically performed in three phases, which may overlap or be subdivided in some cases. In Phase 1 trials, the product candidate is administered to a small number of human subjects to assess its safety and to develop detailed profiles of its pharmacological and pharmacokinetic actions (i. e., absorption, distribution, metabolism and excretion), assess the early safety profile, determine side effects associated with increasing doses, and, if possible, gain early evidence of effectiveness. Although Phase 1 trials are typically conducted in healthy human subjects, in some instances (including, for example, with some cancer therapies) the trial subjects are patients with the targeted disease or condition. In Phase 2 trials, the product candidate is administered to a relatively small sample of the intended patient population to develop initial data regarding efficacy in the targeted disease, determine the optimal dose range, and generate additional information regarding the product candidate' s safety. Additional animal toxicology studies may precede this phase. In Phase 3 trials, the product candidate is administered to a larger group of patients with the target disease or disorder, which may include patients with concomitant diseases and medications. Typically, Phase 3 trials are conducted at multiple study sites and may be conducted concurrently for the sake of time and efficiency. The purpose of Phase 3 clinical trials is to obtain additional information about safety and effectiveness necessary to evaluate the product candidate' s overall risk- benefit profile and to provide a basis for product labeling. Phase 3 data often form the core basis on which the FDA evaluates a product candidate' s safety and effectiveness when considering the product application. The study sponsor, the FDA or an IRB may suspend or terminate a clinical trial at any time on various grounds, including a determination that study subjects are being exposed to an unacceptable health risk. Success in early- stage clinical trials does not assure success in later- stage clinical trials. Moreover, data from clinical trials are not always conclusive and may be subject to alternative interpretations that could delay, limit or prevent approval. When a clinical trial is carried out in the European Union, the Clinical Trials Regulation (CTR) provides the regulatory framework. On January 31, 2022, this CTR repealed the Clinical Trials Directive (CTD) and national implementing legislation in the European Union Member States. From January 31, 2025, all trials approved under the old CTD that continue running after this date, will need to comply with the new CTR. Until January 30, 2023, clinical trial sponsors could choose whether to start a new clinical trial under the CTD or under the new CTR. However, from January 31, 2023 onwards, new clinical trials would automatically fall under the scope of the new CTR. The main characteristics of the CTR include: a streamlined application procedure to the EMA through a single entry point, the " Clinical Trials Information System " enabling sponsors to apply for clinical trial authorization in up to 30 European countries; a single set of documents to be prepared and submitted for the application as well as simplified reporting procedures for clinical trial sponsors; and a harmonized procedure for the assessment of applications for clinical trials. NDA Submission and Review. After completing the clinical studies, a sponsor seeking approval to market a product candidate in the United States submits to the FDA a New Drug Application (NDA). The NDA is a comprehensive application intended to demonstrate the product candidate' s safety and effectiveness and includes, among other things, preclinical and clinical data, information about the product candidate' s composition, the sponsor' s plans for manufacturing and packaging and proposed labeling. When an NDA is submitted, the FDA makes an initial determination as to whether the application is sufficiently complete to be accepted for review. If the application is not, the FDA may refuse to accept the NDA for filing and request additional information. A refusal to file, which requires resubmission of the NDA with the requested additional information, delays review of the application. FDA performance goals generally provide for action on an NDA within 10 months of the 60- day filing date, or within 12 months of the NDA submission. That deadline can be extended under certain circumstances, including by the FDA' s requests for additional information. The targeted action date can also be shortened to 6 months of the 60- day filing date, or 8 months after NDA submission for product candidates that are granted priority review designation because they are intended to treat serious or life- threatening conditions and ~~demonstrate the potential~~ **, if approved, would provide a significant improvement in safety or effectiveness when compared** to **standard application** ~~address unmet medical needs~~ . The FDA has other programs to expedite development and review of product candidates that address serious or life- threatening conditions. For example, the Fast Track program is intended to facilitate the development and review of new drugs that demonstrate the potential to address unmet medical needs involving serious or life-

threatening diseases or conditions. If a product candidate receives Fast Track designation, the FDA may review sections of the NDA on a rolling basis, rather than requiring the entire application to be submitted to begin the review. Product candidates with Fast Track designation also may be eligible for more frequent meetings and correspondence with the FDA about the product candidate' s development. Another FDA program intended to expedite development is the Accelerated Approval pathway, which allows approval on the basis of a surrogate endpoint that is reasonably likely to predict clinical benefit or on an intermediate clinical endpoint **that is reasonably likely to predict clinical benefit** . To qualify for review under the Accelerated Approval pathway, a product candidate must treat a serious condition, provide a meaningful advantage over available therapies, and demonstrate an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit or on an intermediate clinical endpoint. On December 29, 2022, Congress enacted the Consolidated Appropriations Act of 2023, which included several changes to the Accelerated Approval pathway within the Food and Drug Omnibus Reform Act (FDORA). Under FDORA, the FDA must specify the conditions for any post- approval studies before granting an Accelerated Approval. FDORA gives the agency significant flexibility in setting forth such conditions, which may include enrollment targets, study protocol and milestones — including the target date of study completion. The FDA may also require, as appropriate, that certain post- approval studies be underway prior to Accelerated Approval or within a specified time from the date of approval. Accelerated Approval sponsors are required to report progress every six months on required post- approval trials. Breakthrough Therapy designation, which is available for product candidates under development for serious or life- threatening conditions and where preliminary clinical evidence shows that the product candidate may have substantial improvement on at least one clinically significant endpoint over available therapies, means that a product candidate will be eligible for all of the benefits of Fast Track designation, as well as more intensive guidance from the FDA on an efficient drug development program and a commitment from the agency to involve senior FDA managers in such guidance. Even if a product candidate qualifies for Fast Track designation or Breakthrough Therapy designation, the FDA may later decide that the product no longer meets the conditions for designation and may rescind the designation, and / or may determine that the product does not meet the standards for approval. As applicable, we anticipate seeking to utilize these programs to expedite the development and review of our product candidates, but we cannot ensure that our product candidates will qualify for such programs, or that we will be able to maintain such designations if we qualify for such programs. The FDA reviews applications to determine, among other things, whether a product is safe and effective for its intended use and whether the manufacturing controls are adequate to assure and preserve the product' s identity, strength, quality, and purity. For some NDAs, the FDA may convene an advisory committee to seek insights and recommendations on issues relevant to approval of the application. Although the FDA is not bound by the recommendation of an advisory committee, the agency considers such recommendations carefully when making decisions. Before approving a new drug product, the FDA also requires that the facilities at which the product will be manufactured or advanced through the supply chain be in compliance with current good manufacturing practices (GMP) requirements and regulations governing, among other things, the manufacture, shipment, and storage of the product. The FDA also can conduct audits to determine if the clinical trials were conducted in compliance with GCP. After review of an NDA, the FDA may grant marketing approval, request additional information, or issue a complete response letter (CRL) communicating the reasons for the agency' s decision not to approve the application. The CRL may request additional information, including additional preclinical or clinical data, for the FDA to reconsider the application. An NDA may be resubmitted with the deficiencies addressed, but resubmission does not guarantee approval. Data from clinical trials are not always conclusive, and the FDA' s interpretation of data may differ from the sponsor' s. Obtaining approval can take years, requires substantial resources and depends on a number of factors, including the severity of the targeted disease or condition, the availability of alternative treatments, and the risks and benefits demonstrated in clinical trials. Additionally, as a condition of approval, the FDA may impose restrictions that could affect the commercial prospects of a product and increase our costs, such as a Risk Evaluation and Mitigation Strategy (REMS), and / or post- ~~approval commitments~~ **marketing requirements** to conduct additional clinical trials or non- clinical studies or to conduct surveillance programs to monitor the product' s effects. Under the Pediatric Research Equity Act (PREA), certain applications for approval must also include an assessment, generally based on clinical study data, of the safety and effectiveness of the subject product in relevant pediatric populations, unless a waiver or deferral is granted. Moreover, once a product is approved, information about its safety or effectiveness from broader clinical use may limit or prevent successful commercialization because of regulatory action, market forces or for other reasons. Post- approval modifications to a drug product, such as changes in indications, labeling or manufacturing processes or facilities, may require development and submission of additional information or data in a new or supplemental NDA, which would also require prior FDA approval. Competition. The Drug Price Competition and Patent Term Restoration Act of 1984 (the Hatch- Waxman Act) establishes two abbreviated approval pathways for product candidates that are in some way follow- on versions of already approved branded NDA products: (i) generic versions of the approved reference listed drug (RLD), which may be approved under an abbreviated new drug application (ANDA) by showing that the generic product is the " same as " the approved product in key respects; and (ii) a product that is similar but not identical to a listed drug, which may be approved under a 505 (b) (2) NDA, in which the sponsor relies to some degree on information from investigations that were not conducted by or for the applicant and for which the applicant has not obtained a right of reference, and submits its own product- specific data to support the differences between the product and the listed drug. The sponsor of an ANDA or 505 (b) (2) application seeking to rely on an approved product as the RLD or listed drug must make one of several certifications regarding each patent for the RLD that is listed in the FDA publication, Approved Drug Products with Therapeutic Equivalence Evaluations, which is referred to as the Orange Book. A " Paragraph I " certification is the sponsor' s statement that patent information has not been filed for the RLD. A " Paragraph II " certification is the sponsor' s statement that the RLD' s patents have expired. A " Paragraph III " certification is the sponsor' s statement that it will wait for the patent to expire before obtaining approval for its product. A " Paragraph IV " certification is an assertion that the patent does not block approval of the later product, either because the patent is invalid or

unenforceable or because the patent, even if valid, is not infringed by the new product. Once the FDA accepts for filing an ANDA or 505 (b) (2) application containing a Paragraph IV certification, the applicant must within 20 days provide notice to the RLD or listed drug NDA holder and patent owner that the application has been submitted and provide the factual and legal basis for the applicant' s assertion that the patent is invalid or not infringed. If the NDA holder or patent owner files suit against the ANDA or 505 (b) (2) applicant for patent infringement within 45 days of receiving the Paragraph IV notice, the FDA is prohibited from approving the ANDA or 505 (b) (2) application for a period of 30 months or the resolution of the underlying suit, whichever is earlier. Exclusivity and Patent Protection. In the United States and elsewhere, certain regulatory exclusivities and patent rights can provide an approved drug product with protection from certain competitors' products for a period of time and within a certain scope. In the United States, those protections include regulatory exclusivity under the Hatch- Waxman Act, which provides periods of exclusivity for a branded drug product that would serve as an RLD for a generic drug applicant filing and an ANDA under section 505 (j) of the FD & C Act or as a listed drug for an applicant filing an NDA under section 505 (b) (2) of the FD & C Act. If such a product is a " new chemical entity " (NCE) generally meaning that the active moiety has never before been approved in any drug, there is a period of five years from the product' s approval during which the FDA may not accept for filing any ANDA or 505 (b) (2) application for a drug with the same active moiety. An ANDA or 505 (b) (2) application may be submitted after four years, however, if the sponsor of the application makes a Paragraph IV certification (as described above). Such a product that is not an NCE may qualify for a three- year period of exclusivity if its NDA contains new clinical data (other than bioavailability studies), derived from studies conducted by or for the sponsor, that were necessary for approval. In this instance, the three- year exclusivity period does not preclude filing or review of an ANDA or 505 (b) (2) application; rather, the FDA is precluded from granting final approval to the ANDA or 505 (b) (2) application until three years after approval of the RLD. This three- year exclusivity applies only to the conditions of approval that required submission of the clinical data. The Hatch- Waxman Act also provides for the restoration of a portion of the patent term lost during product development and FDA review of an NDA if approval of the application is the first permitted commercial marketing of a drug containing the active ingredient. The patent term restoration period is generally one- half the time between the effective date of the IND or the date of patent grant (whichever is later) and the date of submission of the NDA, plus the time between the date of submission of the NDA and the date of FDA approval of the product. The maximum period of restoration is five years, and the patent cannot be extended to more than 14 years from the date of FDA approval of the product. Only one patent claiming each approved product is eligible for restoration and the patent holder must apply for restoration within 60 days of approval. The USPTO, in consultation with the FDA, reviews and approves the application for patent term restoration. In the European Union, new medicinal products are granted a protection period of eight years of data exclusivity and an additional two years of market exclusivity. As such, for a period of eight years, generics cannot use the data of the innovator to obtain a marketing authorization. Only after eight years have lapsed, other parties that apply for a marketing authorization (generics or biosimilars) may make reference to the dossier of the originator product. Only after another two years (i. e., a total of ten years) may a generic or biosimilar medicinal product be placed on the market. In April 2023, the European Commission published a proposal to reform this system. In ~~this~~ **the Commission' s** proposal, the current standard period of regulatory **data protection would be reduced from eight years to six years. In the adopted position of the European Parliament, the baseline of 8 years of** data protection will be reduced ~~from eight years~~ to ~~six~~ **7. 5** years. The legislative process for this reform is expected to take several years **, and adoption of the new legislation is not expected to take place before 2026** . It is currently uncertain if the proposal will be adopted in its current form, and it is uncertain if and when the revised legislation would enter into force. Emergency Use Authorization (EUA). The Secretary of Health and Human Services may authorize unapproved medical products to be marketed in the context of an actual or potential emergency that has been designated by the **United States** ~~U. S.~~ government. The COVID-19 pandemic has been designated as such a national emergency. After an emergency has been announced, the Secretary of Health and Human Services may authorize the issuance of and the FDA Commissioner may issue EUAs for the use of specific products based on criteria established by the FDCA, including that the product at issue may be effective in diagnosing, treating, or preventing serious or life- threatening diseases when there are no adequate, approved, and available alternatives. Although the criteria of an EUA differ from the criteria for approval of an NDA, EUAs nevertheless require the development and submission of data to satisfy the relevant FDA standards, and a number of ongoing compliance obligations. The FDA expects EUA holders to work toward submission of full applications, such as an NDA, as soon as possible. An EUA is also subject to additional conditions and restrictions and is product- specific. An EUA terminates when the emergency determination underlying the EUA terminates. An EUA is not a long- term alternative to obtaining FDA approval, licensure, or clearance for a product. The FDA may revoke an EUA for a variety of reasons, including where it is determined that the underlying health emergency no longer exists or warrants such authorization, so it is not possible to predict how long an EUA may remain in place. Post- Approval Regulation Once approved, drug products are subject to continuing extensive regulation by the FDA, including ongoing monitoring for safety information, maintaining appropriate registrations and licenses, and hosting periodic inspections. If ongoing regulatory requirements are not met, or if safety problems occur after a product reaches market, the FDA may take actions to change the conditions under which the product is marketed, such as requiring labeling modifications, restricting distribution, or even withdrawing approval. In addition to FDA regulation, our business is also subject to extensive federal, state, local and foreign regulation. Good Manufacturing Practices. Companies engaged in manufacturing drug products or their components must comply with applicable GMP requirements, which include requirements regarding organization and training of personnel, building and facilities, equipment, control of components and drug product containers, closures, production and process controls, packaging and labeling controls, holding and distribution, laboratory controls and records and reports. The FDA inspects equipment, facilities and manufacturing processes before approval and conducts periodic re- inspections after approval. If, after receiving approval, a company makes a material change in manufacturing equipment, location, or process (all of which are, to some degree, incorporated in the NDA), additional regulatory review and approval may be required. Failure to

comply with applicable GMP requirements or the conditions of the product' s approval may lead the FDA to take enforcement actions, such as issuing a warning letter, or to seek sanctions, including fines, civil penalties, injunctions, suspension of manufacturing operations, imposition of operating restrictions, withdrawal of FDA approval, seizure or recall of products, and criminal prosecution. Although we periodically monitor FDA compliance of the third parties on which we rely for manufacturing our product candidates, we cannot be certain that our present or future third- party manufacturers will consistently comply with GMP or other applicable FDA regulatory requirements. Sales and Marketing. Once a product is approved, the advertising, promotion and marketing of the product will be subject to close regulation, including with regard to promotion to healthcare practitioners, direct- to- consumer advertising, communications regarding unapproved uses, industry-sponsored scientific and educational activities and promotional activities involving the internet. In addition to FDA restrictions on marketing of pharmaceutical products, state and federal fraud and abuse laws have been applied to restrict certain marketing practices in the pharmaceutical industry. Failure to comply with applicable requirements in this area may subject a company to adverse publicity, investigations and enforcement action by the FDA, the Department of Justice, the Office of the Inspector General of the Department of Health and Human Services, and / or state authorities. This could subject a company to a range of penalties that could have a significant commercial impact, including civil and criminal fines and agreements that materially restrict the manner in which a company promotes or distributes drug products. New Legislation. New legislation is passed periodically in Congress, or at the state level, that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. Further, the FDA revises its regulations and guidance in light of new legislation **or may revise, withdraw, or issue new regulations and guidance in light of the priorities of the new presidential administration** in ways that may affect our business or product candidates. It is impossible to predict whether other changes to legislation, regulation, or guidance will be enacted, or what the impact of such changes, if any, may be. However, an important and foreseeable example of new legislation is the forthcoming European Union pharmaceutical legislation revision. The European Commission presented a legislative proposal in April 2023 that would change European Union pharmaceutical law with respect to for example regulatory data exclusivity, environmental risk assessment, medicines shortages and other topics. **In April 2024, the European Parliament adopted its position on the Commission' s proposal, amending some of the proposed legislation.** The legislative process for this reform is expected to take several years. It is currently uncertain if the proposal will be adopted in its current form, and it is uncertain if and when the revised legislation would enter into force **. Adoption of the legislation is not expected to take place before 2026** . Other Requirements. Companies that manufacture or distribute drug products pursuant to approved NDAs must meet numerous other regulatory requirements, including adverse event reporting, submission of periodic reports, and record- keeping obligations. Fraud and Abuse Laws. At such time as we market, sell and distribute any products for which we obtain marketing approval, it is possible that our business activities could be subject to scrutiny and enforcement under one or more federal or state health care fraud and abuse laws and regulations, which may constrain the business or financial arrangements and relationships through which we market, sell and distribute any products for which we obtain marketing approval. ~~These~~ -- **The** ~~restrictions under~~ applicable federal and state health care fraud and abuse laws and regulations that may affect our ability to operate include: • The **United States** ~~U. S.~~ federal Anti- Kickback Law, which prohibits, among other things, knowingly or willingly offering, paying, soliciting or receiving remuneration, directly or indirectly, in cash or in kind, to induce or reward the purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any health care items or service for which payment may be made, in whole or in part, by federal healthcare programs such as Medicare and Medicaid. This statute has been interpreted to apply to arrangements between pharmaceutical companies on one hand and prescribers, purchasers and formulary managers on the other. Liability may be established under the **United States** ~~U. S.~~ federal Anti- Kickback Law without proving actual knowledge of the statute or specific intent to violate it. In addition, the government may assert that a claim including items or services resulting from a violation of the **United States** ~~U. S.~~ federal Anti- Kickback Law constitutes a false or fraudulent claim for purposes of the **United States** ~~U. S.~~ federal civil False Claims Act. Although there are a number of statutory exemptions and regulatory safe harbors to the **United States** ~~U. S.~~ federal Anti- Kickback Law protecting certain common business arrangements and activities from prosecution or regulatory sanctions, the exemptions and safe harbors are drawn narrowly, and practices that do not fit squarely within an exemption or safe harbor, or for which no exception or safe harbor is available, may be subject to scrutiny. • The **United States** ~~U. S.~~ federal civil False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment of government funds or knowingly making, using or causing to be made or used, a false record or statement material to an obligation to pay money to the government or knowingly concealing or knowingly and improperly avoiding, decreasing or concealing an obligation to pay money to the federal government. Actions under the False Claims Act may be brought by the United States Attorney General or as a qui tam action by a private individual (a whistleblower) in the name of the government and the individual, and the whistleblower may share in any monetary recovery. Many pharmaceutical and other healthcare companies have been investigated and have reached substantial financial settlements with the federal government under the civil False Claims Act for a variety of alleged improper marketing activities, including: providing free product to customers with the expectation that the customers would bill federal programs for the product; providing sham consulting fees, grants, free travel and other benefits to physicians to induce them to prescribe the company' s products; and inflating prices reported to private price publication services, which are used to set drug payment rates under government healthcare programs. In addition, ~~in recent years~~ the government has pursued civil False Claims Act cases against a number of pharmaceutical companies for causing false claims to be submitted as a result of the marketing of their products for unapproved, and thus non- reimbursable, uses. Because of the threat of treble damages and mandatory penalties per false or fraudulent claim or statement, healthcare and pharmaceutical companies often resolve allegations ~~without admissions of liability~~ for significant and material amounts. Pharmaceutical and other healthcare companies also are subject to other federal false claim laws, including, among others,

federal criminal healthcare fraud and false statement statutes that extend to non- government health benefit programs. • The fraud provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which impose criminal liability for knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third- party payors, and prohibit knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false fictitious or fraudulent statement or entry, in connection with the delivery of or payment for healthcare benefits, items or services. • Analogous state and local laws and regulations, such as state anti- kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non- governmental third- party payors, including private insurers; state and foreign laws that require pharmaceutical companies to comply with the pharmaceutical industry' s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state laws that restrict the ability of manufacturers to offer co- pay support to patients for certain prescription drugs; and state and foreign laws that require drug manufacturers to report information related to clinical trials, or information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; state laws and local ordinances that require identification or licensing of sales representatives. • The **United States** ~~U. S.~~ federal Physician Payment Sunshine Act, being implemented as the Open Payments Program, which requires manufacturers of drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid or the Children' s Health Insurance Program (with certain exceptions) to report annually to the Centers for Medicare and Medicaid Services (CMS) information related to direct or indirect payments and other transfers of value to physicians, physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, certified nurse- midwives, and teaching hospitals, as well as ownership and investment interests held in the company by physicians and their immediate family members. • The federal Foreign Corrupt Practices Act of 1997 and other similar anti- bribery laws in other jurisdictions generally prohibit companies and their intermediaries from providing money or anything of value to officials of foreign governments, foreign political parties or international organizations with the intent to obtain or retain business or seek a business advantage. Recently, there has been a substantial increase in anti- bribery law enforcement activity by United States regulators, with more frequent and aggressive investigations and enforcement proceedings by both the Department of Justice and the United States Securities and Exchange Commission (the SEC). Violations of United States or foreign laws or regulations could result in the imposition of substantial fines, interruptions of business, loss of supplier, vendor or other third- party relationships, termination of necessary licenses and permits and other legal or equitable sanctions. Other internal or government investigations or legal or regulatory proceedings, including lawsuits brought by private litigants, may also follow as a consequence. Violations of any of the laws described above or any other governmental regulations are punishable by significant civil, criminal and administrative penalties, damages, imprisonment, fines and exclusion from government- funded healthcare programs, such as Medicare and Medicaid. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly. Privacy Laws. We are also subject to federal, state and foreign laws and regulations governing data privacy, the security of personal information, including health information, and the collection, use and disclosure, and protection of health- related and other personal information. The legislative and regulatory landscape for privacy and data protection continues to evolve, and there has been an increasing focus on privacy and data protection issues that may affect our business, including recently enacted laws in all jurisdictions where we operate. Numerous federal and state laws, including state security breach notification laws, state health information privacy laws, state genetic privacy laws, and federal and state consumer protection and privacy laws, (including, for example, Section 5 of the Federal Trade Commission Act (FTC Act) **and the Health Breach Notification Rule** , and the California Consumer Privacy Act (CCPA) **, as amended by the California Privacy Rights Act (CPRA)**) govern the collection, use and disclosure of personal information. These laws may differ from each other in significant ways, thus complicating compliance efforts. Federal regulators, state attorneys general, and plaintiffs' attorneys have been and will likely continue to be active in this space. Activities outside of the **United States** ~~U. S.~~ implicate local and national data protection standards, impose additional compliance requirements and generate additional risks of enforcement for non- compliance. The European Union' s General Data Protection Regulation, including as implemented in the United Kingdom, (collectively, GDPR) and other data protection, privacy and similar national, state / provincial and local laws may restrict the access, use, storage, disclosure and other processing activities concerning patient health information abroad. Compliance efforts will likely be an increasing and substantial cost in the future. Failure to comply with such laws and regulations could result in government enforcement actions and create liability for us (including the imposition of significant penalties), private litigation and / or adverse publicity that could negatively affect our business. In addition, if we successfully commercialize our product candidates, we may obtain patient health information from healthcare providers that prescribe our products and research institutions we collaborate with, and they are subject to privacy and security requirements under HIPAA. Although we are not directly subject to HIPAA other than potentially with respect to providing certain employee benefits, we could potentially be subject to criminal penalties if we, or our affiliates or our agents knowingly receive individually identifiable health information maintained by a HIPAA- covered entity in a manner that is not authorized or permitted by HIPAA. The Federal Trade Commission (FTC) also sets expectations for failing to take appropriate steps to keep consumers' personal information secure, or failing to provide a level of security commensurate to promises made to individual about the security of their personal information (such as in a privacy notice), which may constitute unfair or deceptive acts or practices in violation of Section 5 (a) of the FTC Act. The FTC expects a company' s data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. Individually identifiable health information is considered sensitive data that

merits stronger safeguards. With respect to privacy, the FTC also sets expectations for failing to honor the privacy promises made to individuals about how the company handles consumers' personal information; such failure may also constitute unfair or deceptive acts or practices in violation of the FTC Act. Enforcement by the FTC under the FTC Act can result in civil penalties or enforcement actions. **The FTC also has the power to enforce the Health Breach Notification Rule, which imposes notification obligations on companies for breaches of certain health information contained in personal health records. The FTC has brought enforcement actions under both Section 5 of the FTC Act and the Health Breach Notification Rule.** In California, the CCPA establishes certain requirements for data use and sharing transparency and provides California residents certain rights concerning the use, disclosure, and retention of their personal information. The CCPA and its implementing regulations have already been amended multiple times since their enactment. In November 2020, California voters approved the ~~California Privacy Rights Act (~~ CPRA ~~)~~ ballot initiative which introduced significant amendments to the CCPA and established and funded a dedicated California privacy regulator, the California Privacy Protection Agency (CPPA). The amendments introduced by the CPRA went into effect on January 1, 2023, and implementing regulations continue to be introduced by the CPPA. Failure to comply with the CCPA may result in, among other things, significant civil penalties and injunctive relief, or statutory or actual damages. In addition, California residents have the right to bring a private right of action in connection with certain types of incidents. These claims may result in significant liability and damages. Other states, including Virginia, Colorado, Utah, Indiana, Iowa, Tennessee, Montana, Texas and Connecticut have enacted privacy laws similar to the CCPA that impose new obligations or limitations in areas affecting our business and we continue to assess the impact of these state legislations on our business as additional information and guidance becomes available. Similarly, there are a number of legislative proposals in the United States, at both the federal and state level, that could impose new obligations or limitations in areas affecting our business. These laws and regulations are evolving and subject to interpretation, and may impose limitations on our activities or otherwise adversely affect our business. Activities outside of the **United States** ~~U. S.~~ implicate local and national data protection standards, impose additional compliance requirements and generate additional risks of enforcement for non- compliance. The European Union' s / United Kingdom' s GDPR and other data protection, privacy and similar national, state / provincial and local laws may also restrict the access, use, storage, disclosure and other processing activities concerning patient health information abroad. We may be required to expend significant capital and other resources to ensure ongoing compliance with applicable privacy, data protection and cybersecurity laws, to protect against security breaches and hackers, ~~or~~ **to notify breaches with competent authorities, and** to alleviate problems caused by such breaches. Compliance with these laws is difficult, constantly evolving, time consuming, and requires a flexible privacy framework and substantial resources. Compliance efforts will likely be an increasing and substantial cost in the future. There are also a number of legislative proposals in the European Union, the United States, at both the federal and state level, and other jurisdictions that could impose new obligations or limitations in areas affecting our business. In addition, some countries are considering or have passed legislation implementing data protection requirements such as local storage and processing of data or similar requirements that could increase the cost and complexity of delivering our services and research activities. These laws and regulations, as well as any associated claims, inquiries, or investigations or any other government actions may lead to unfavorable outcomes including increased compliance costs, delays or impediments in the development of new products, negative publicity, increased operating costs, diversion of management time and attention, and remedies that harm our business, including fines or demands or orders that we modify or cease existing business practices. The GDPR imposes significant fines and other administrative penalties to which we could be subject in the event of any non- compliance, including fines of up to EUR 10, 000, 000 or up to 2 % of our total worldwide annual turnover for certain comparatively minor offenses, or up to EUR 20, 000, 000 or up to 4 % of our total worldwide annual turnover for more serious offenses. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with data protection authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. With regard to the transfer of personal data, the GDPR **generally** restricts the ability of companies to transfer personal data from the European Economic Area to the United States and other countries, which may adversely affect our ability to transfer personal data or otherwise may cause us to incur significant ~~costsfor~~ --- **costs for** implementing lawful transfer mechanisms, conducting data transfer impact assessments, and implementing additional measures where necessary to ensure that personal data transferred are adequately protected in a manner essentially equivalent to the EU. The GDPR provides different transfer mechanisms we can use to lawfully transfer personal data from the EU to countries outside the EU. An example is relying on adequacy decisions of the European Commission, such as the EU- U. S. Data Privacy Framework which was adopted by the European Commission in July 2023. The adequacy decision concludes that the **United States** ~~U. S.~~ ensures an adequate level of protection (compared to that of the EU) for personal data transferred from the EU to **United States** ~~U. S.~~ companies participating in the EU- U. S. Data Privacy Framework. The adequacy decisions of the European Commission are subject to periodic reviews and may be amended or withdrawn. Another example of a lawful transfer mechanism is using the EU Standard Contractual Clauses as approved by the European Commission in June 2021, which are the most common used transfer mechanism used to transfer personal data out of the EU. In order to use the EU Standard Contractual Clauses mechanism, the exporter and the importer must ensure that the importer may guarantee a level of personal data protection in the importing country' s level of protection must be adequate that is essentially equivalent to that of the European Economic Area. Compliance with EU data transfer obligations involves conducting transfer impact assessments, which includes documenting detailed analyses of data access and protection laws in the countries in which data importers are located, which can be costly and time- consuming. Data importers must also expend resources in analyzing their ability to comply with transfer obligations, including implementing new safeguards and controls to further protect personal data ~~After the European Court of Justice' s ruling in July 2020, companies may no longer rely on the EU- U. S. Privacy Shield Framework as a basis to transfer personal data from the European Union to the United States, but U. S.- based companies may rely on other authorized means and procedures to transfer personal data provided by the GDPR~~ .

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may obtain regulatory approval **and commercialize** . The regulations that govern marketing approvals, pricing and reimbursement for new drug products vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some **foreign** countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, which could negatively impact the revenues we are able to generate from the sale of the product in that particular country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates even if our product candidates obtain marketing approval. Our ability to commercialize any products successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available in a timely manner from third- party payors, **which, in the United States,** ~~including~~ **include** government healthcare programs such as Medicare and Medicaid, commercial health insurers and managed care organizations. Government authorities and other third- party payors, such as private health insurers and health maintenance organizations, determine which medications they will cover and establish reimbursement levels. Third- party payors may limit coverage to specific products on an approved list, or formulary, which may not include all of the FDA- approved products for a particular indication. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. A primary trend in the United States healthcare industry and elsewhere is cost containment. Government healthcare programs and other third- party payors are increasingly challenging the prices charged for medical products and services and examining the medical necessity and cost- effectiveness of medical products and services, in addition to their safety and efficacy, and have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third- party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that coverage and reimbursement will be available promptly or at all for any product that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Moreover, eligibility for coverage and reimbursement does not imply that any drug will be paid for in all cases. Limited coverage may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. If coverage and reimbursement are not available or reimbursement is available only to limited levels, we may not successfully commercialize any product candidate for which we obtain marketing approval. Obtaining coverage and adequate reimbursement is a time- consuming and costly process. There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for coverage and reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may only be temporary. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. 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 United States. Limited coverage may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. Third- party payors also may seek additional clinical evidence, including expensive pharmacoeconomic studies, beyond the data required to obtain marketing approval, demonstrating clinical benefits and value in specific patient populations, before covering our products for those patients. If reimbursement is available only for limited indications, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval. Our inability to promptly obtain coverage and profitable reimbursement rates from both government- funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition. **Government Price Reporting** If we successfully commercialize any of our products, we may participate in the Medicaid Drug Rebate Program. Participation is required for federal funds to be available for our products under Medicaid and Medicare Part B. Under the Medicaid Drug Rebate Program, we would be required to pay a rebate to each state Medicaid program for our covered outpatient drugs that are dispensed to Medicaid beneficiaries and paid for by a state Medicaid program as a condition of having federal funds being made available to the states for our drugs under Medicaid and under Part B of the Medicare program ~~. Rebates owed by manufacturers under the Medicaid Drug Rebate Program are no longer subject to a cap as of January 1, 2024, which could adversely affect our rebate liability~~ . Federal law requires that any company that participates in the Medicaid Drug Rebate Program also participate in the Public Health Service' s 340B drug pricing program in order for federal funds to be available for the manufacturer' s drugs under Medicaid and Medicare Part B. The 340B program requires participating manufacturers to agree to charge statutorily- defined covered entities no more than the 340B " ceiling price " for the manufacturer' s covered outpatient drugs. These 340B covered entities include a variety of community health clinics and other entities that receive health services grants from the Public Health Service, as well as hospitals that serve a disproportionate share of low- income patients. Medicare is a federal program that is administered by the federal government that covers individuals age 65 and over or that are disabled as well as those with certain health conditions. Medicare Part B generally covers drugs that must be administered by physicians or other health care practitioners; among others. Medicare Part B generally pays for such drugs under a payment methodology based on the average sales price of the drugs. Manufacturers are required to report average sales price information to CMS on a quarterly basis. The manufacturer- submitted information may

be used by CMS to calculate Medicare payment rates. Manufacturers are obligated to pay refunds to Medicare for single source drugs or biologicals, or biosimilar biological products, reimbursed under Medicare Part B and packaged in single- dose containers or single- use packages, for units of discarded drug reimbursed by Medicare Part B in excess of 10 percent of total allowed charges under Medicare Part B for that drug. Manufacturers that fail to pay refunds could be subject to civil monetary penalties of 125 percent of the refund amount. Further, the Inflation Reduction Act of 2022 (IRA) establishes a Medicare Part B inflation rebate scheme, under which, generally speaking, manufacturers will owe rebates if the average sales price of a Part B drug increases faster than the pace of inflation. Failure to timely pay a Part B inflation rebate is subject to a civil monetary penalty. Medicare Part D generally provides coverage to enrolled Medicare patients for self- administered drugs (i. e., drugs that are not administered by a physician). Medicare Part D is administered by private prescription drug plans approved by the **United States** ~~U. S.~~ government and, subject to detailed program rules and government oversight, each drug plan establishes its own Medicare Part D formulary for prescription drug coverage and pricing, which the drug plan may modify from time to time. The prescription drug plans negotiate pricing with manufacturers and pharmacies, and may condition formulary placement on the availability of manufacturer discounts. In addition, under the ~~coverage gap discount program, manufacturers are required to provide a 70 % discount on brand name prescription drugs utilized by Medicare Part D beneficiaries when those beneficiaries are in the coverage gap phase of the Part D benefit design. Civil monetary penalties could be due if a manufacturer were to fail to offer discounts under the coverage gap discount program. The IRA sunsets the coverage gap discount program starting in 2025 and replaces it with a~~ new manufacturer discount program **established by the IRA and effective in 2025, manufacturers are, in general, required to provide a 10 % discount on a covered Part D drug where a beneficiary is in the initial phase of Part D coverage and a 20 % discount where a beneficiary is in the catastrophic phase of Part D coverage** . Failure to pay a discount under this new program will be subject to a civil monetary penalty. In addition, the IRA established a Medicare Part D inflation rebate scheme, under which, generally speaking, manufacturers will owe additional rebates if the average manufacturer price of a Part D drug increases faster than the pace of inflation. Failure to timely pay a Part D inflation rebate is subject to a civil monetary penalty. The IRA also creates a drug price negotiation program under which the prices for **certain** Medicare units of certain high Medicare spend drugs and biologicals without generic or biosimilar competition will be capped by reference to, among other things, a specified non- federal average manufacturer price starting in 2026. Failure to comply with requirements under the drug price negotiation program is subject to an excise tax and / or a civil monetary penalty. This or any other legislative change could impact the market conditions for our product candidates. In addition, in order to be eligible to have its products paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by the Department of Veterans Affairs (the VA), Department of Defense (DoD), Public Health Service, and Coast Guard (the Big Four Agencies) and certain federal grantees, a manufacturer also must participate in the VA Federal Supply Schedule (FSS) pricing program, established by Section 603 of the Veterans Health Care Act of 1992 (the VHCA). Under this program, the manufacturer is obligated to make its covered drugs (innovator multiple source drugs, single source drugs, and biologics) available for procurement on an FSS contract and charge a price to the Big Four Agencies that is no higher than the Federal Ceiling Price (FCP), which is a price calculated pursuant to a statutory formula. The FCP is derived from a calculated price point called the " non- federal average manufacturer price " (Non- FAMP), which we will be required to calculate and report to the VA on a quarterly and annual basis. Moreover, pursuant to Defense Health Agency (DHA) regulations, manufacturers must provide rebates on utilization of their innovator and single source products that are dispensed to TRICARE beneficiaries by TRICARE network retail pharmacies. The formula for determining the rebate is established in the regulations and is based on the difference between the annual non- federal average manufacturer price and the Federal Ceiling Price, each required to be calculated by us under the VHCA. The requirements under the Medicaid Drug Rebate Program, 340B program, FSS, and TRICARE programs could reduce the revenue we may generate from any products that are commercialized in the future and could adversely affect our business and operating results. United States Healthcare Reform The United States **federal** and **state governments** ~~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, restrict or regulate post- approval activities and affect our ability to profitably sell any product candidate for which we obtain marketing approval. The United States government, state legislatures and foreign governments also have shown significant interest in implementing cost- containment programs to limit the growth of government- paid healthcare costs, including price controls, restrictions on reimbursement and requirements for substitution of generic products for branded prescription drugs. Additionally, some states have established Prescription Drug Affordability Boards (or similar entities) to review high- cost drugs and, in some cases, set upper payment limits. In recent years, Congress has considered reductions in Medicare reimbursement levels for drugs administered by physicians. The Centers for Medicare & Medicaid Services (CMS), the agency that administers the Medicare and Medicaid programs, has authority to revise reimbursement rates and to implement coverage restrictions. Cost reduction initiatives and changes in coverage implemented through legislation or regulation could decrease utilization of and reimbursement for any approved products, which in turn would affect the price we can receive for those products. Any reduction in reimbursement from Medicare and other government programs may result in a similar reduction in payment from commercial payers. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products. The Affordable Care Act, as amended (the Affordable Care Act), has substantially changed the way healthcare is financed by both governmental and private insurers, and has significantly impacted the pharmaceutical industry. The Affordable Care Act was intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against healthcare fraud and abuse, add new transparency requirements for healthcare and health insurance industries, impose new taxes and fees on pharmaceutical ~~and medical device~~ manufacturers, and impose additional health policy reforms. Certain provisions of the Affordable Care Act have been subject to judicial challenges as well as efforts to modify them or to alter their interpretation and implementation. For example, the Tax Cuts and Jobs Act

eliminated the tax- based shared responsibility payment for individuals who fail to maintain minimum essential coverage under section 5000A of the Internal Revenue Code of 1986, commonly referred to as the individual mandate. Additional legislative changes, regulatory changes, and judicial challenges related to the Affordable Care Act remain possible. It is unclear how efforts to modify or invalidate the Affordable Care Act or its implementing regulations, or portions thereof, will affect our business. Any such changes could decrease the number of individuals with health coverage. It is possible that the Affordable Care Act, as currently enacted or as it may be amended in the future, and other healthcare reform measures, including those that may be adopted in the future, could have a material adverse effect on our industry generally and on our ability to successfully commercialize our product candidates, if approved. In addition, other legislative changes have been proposed since the Affordable Care Act was enacted. For example, the Budget Control Act of 2011, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals for spending reductions. The Joint Select Committee did not achieve a targeted deficit reduction, which triggered the legislation' s automatic reductions. In concert with subsequent legislation, this has resulted in aggregate reductions to Medicare payments to providers of, on average, 2 % per fiscal year through 2031. Sequestration is currently set at 2 % and will increase to 2. 25 % for the first half of fiscal year 2030, to 3 % for the second half of fiscal year 2030, and to 4 % for the remainder of the sequestration period that lasts through the first six months of fiscal year 2031. As long as these cuts remain in effect, they could adversely impact payment for any of our products that are reimbursed under Medicare, once commercialized. **Further, the IRA, among other things, established a Medicare Part B and Part D inflation rebate scheme, under which, generally, manufacturers will owe rebates if the average sales price of certain Part B drugs or annual average manufacturer price of certain covered Part D drugs increases faster than the pace of inflation. The IRA further makes several changes to the Medicare Part D benefit, including a limit on annual out- of- pocket costs, and replacement of the coverage gap discount program with a new manufacturer discount program beginning in 2025.** We expect that the Affordable Care Act **, IRA** , as well as other healthcare reform measures that have been adopted and may be adopted in the future, may result in more rigorous coverage criteria and new payment methodologies, and in additional downward pressure on coverage and payment and the price that we receive for any approved product, and could seriously harm our future revenues. Any reduction in reimbursement from Medicare, Medicaid or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products. Foreign Regulation In addition to regulations in the United States, we will be subject to a number of significant regulations in other jurisdictions regarding research, clinical trials, approval, manufacturing, distribution, marketing and promotion, safety reporting, privacy and pricing and reimbursement. These requirements and restrictions vary from country to country, but in many instances are similar to the United States requirements, and failure to comply with them could have similar negative effects as noncompliance in the United States. Corporate Information **We, under the name** Tekmira Pharmaceuticals Corporation (Tekmira) ~~was~~ **, were** incorporated pursuant to the British Columbia Business Corporations Act (BCBCA) **,** on October 6, 2005, and commenced active business on April 30, 2007, when Tekmira and its parent company, Inex Pharmaceuticals Corporation (Inex), were reorganized under a statutory plan of arrangement (the Plan of Arrangement) **,** completed under the provisions of the BCBCA. **The** ~~Pursuant to the~~ Plan of Arrangement **saw** ~~, all of~~ Inex' s **entire** business ~~was~~ transferred to **and continued by** Tekmira ~~. Protiva Biotherapeutics Inc. (Protiva) was acquired on May 30, 2008~~ . On March 4, 2015, we completed a business combination pursuant to which OnCore Biopharma, Inc. ~~(OnCore)~~ became our wholly- owned subsidiary ~~of Tekmira~~ . ~~On~~ **Effective** July 31, 2015, ~~we changed~~ our corporate name **changed** from Tekmira Pharmaceuticals Corporation to Arbutus Biopharma Corporation ~~and OnCore changed its~~ **. Also effective July 31, 2015, the** corporate name **of our wholly owned subsidiary, OnCore Biopharma, Inc. changed** to Arbutus Biopharma, Inc. ~~On~~ **(Arbutus Inc.). We had two wholly owned subsidiaries: Arbutus Inc. and Protiva Biotherapeutics Inc. (Protiva). Effective** January 1, 2018, Protiva was amalgamated with Arbutus **and we** ~~Biopharma Corporation. We~~ had one wholly- owned subsidiary as of December 31, ~~2023~~ **2024** : Arbutus Biopharma, Inc. Our **head office and** principal ~~executive office~~ **place of business** is located at 701 Veterans Circle, Warminster, Pennsylvania ~~, USA,~~ 18974 ~~,~~ and our telephone number is (267) 469- 0914 **. We maintain a website at www. arbutusbio. com. In the first quarter of 2025, our Board decided to exit our corporate headquarters in Warminster, PA** . Unless stated otherwise or the context otherwise requires, references herein to " Arbutus ", " we ", " us " and " our " refer to Arbutus Biopharma Corporation, and, unless the context requires otherwise, the subsidiaries through which we conduct business. Investor Information We are a reporting issuer in Canada under the securities laws of each of the Provinces of Canada. Our common shares trade on the Nasdaq Global Select Market under the symbol " ABUS ". We maintain a website at http: / / www. arbutusbio. com. The information on our website is not incorporated by reference into this Annual Report on Form 10- K and should not be considered to be a part of this Annual Report on Form 10- K. Our website address is included in this Annual Report on Form 10- K as an inactive technical reference only. Copies of this Annual Report on Form 10- K, and our other annual reports on Form 10- K, proxy statements, quarterly reports on Form 10- Q, current reports on Form 8- K and, if applicable, amendments to those reports filed or furnished pursuant to Section 13 (a) or 15 (d) of the Securities Exchange Act of 1934, as amended, are available free of charge through our website under " Investors – Financial Information – SEC Filings " as soon as reasonably practicable after we electronically file these materials with, or otherwise furnish them to, the SEC. The SEC maintains an Internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www. sec. gov. Item 1A. Risk Factors Our business is subject to substantial risks and uncertainties. The occurrence of any of the following risks and uncertainties, either alone or taken together, could materially and adversely affect our business, financial condition, results of operations or prospects. In these circumstances, the market price of our common shares could decline and you may lose all or part of your investment. The risks and uncertainties described below are not the only ones we face. Risks and uncertainties of general applicability and additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially and adversely affect our business, financial

condition, results of operations or prospects. We **are currently involved in patent infringement lawsuits in multiple jurisdictions against Moderna and Pfizer / BioNTech, which are large, well- capitalized companies. These lawsuits have been ongoing for years and have required substantial investments of resources. We anticipate that these proceedings will continue to require similar investments over an extended period of time. Each of the proceedings is subject to substantial uncertainty regarding their outcomes, which is highly dependent upon specific factual matters and legal interpretations. We believe that it is critical to our future success to continue to pursue these actions, and we intend to do so. Each action will result in court rulings and decisions about significant issues, such as claim construction, patent validity, infringement, jurisdiction and other matters, almost all of which are subject to an appeal process that are typically lengthy and unpredictable in terms of outcome. Moreover, the ruling or decision in one proceeding is not necessarily indicative of rulings or decisions that may be issued in another proceeding, even if the factual and legal matters are similar. We expect that various courts will issue significant rulings in several of our proceedings within the next year, and the disclosure of those rulings may cause substantial volatility in our share price and could impact our business, financial condition and results of operations. We** have not begun to market or generate revenues from the commercialization of any of our product candidates. We have only a limited history upon which you can evaluate our business and prospects as our product candidates are still at an early stage of development and thus we have limited experience and have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the biopharmaceutical area. For example, to ~~execute~~ **continue the development of** our ~~business plan~~ **cHBV programs** , we ~~will~~ **would** need to successfully: • execute ~~research and~~ development activities using technologies involved in the development of our product candidates; • build, maintain and protect a strong intellectual property portfolio; • gain regulatory approval and market acceptance for the commercialization of any product candidates we develop; • conduct sales and marketing activities if any of our product candidates are approved; • develop and maintain successful strategic relationships; and • manage our spending and cash requirements ~~as our expenses are expected~~ to **support our** ~~continue to increase due to research and preclinical work,~~ clinical trials, regulatory approvals, commercialization and **the** maintaining **of** our intellectual property portfolio. If we are unsuccessful in accomplishing these objectives, we may not be able to develop our product candidates, raise capital, expand our business or continue our operations. The approach we are taking to discover and develop novel product candidates is unproven and may never lead to marketable products. We are concentrating and intend to continue to concentrate our internal ~~research and~~ development efforts primarily on the ~~discovery and~~ development of product candidates targeting cHBV infection to ultimately develop a functional curative combination regimen. Our future success depends in part on the successful development of these product candidates. Our approach to the treatment of HBV is unproven, and we do not know whether we will be able to develop any products of commercial value. There is no known functional cure for HBV. Any compounds that we develop may not effectively address HBV persistence. Even if we are able to develop compounds that address one or more of the key factors in the HBV life cycle (e. g., HBV replication, HBsAg expression and immune reactivation), targeting these key factors has not been proven to functionally cure HBV. If we cannot develop compounds to achieve our goal of functionally curing HBV internally, we may be unable to acquire additional product candidates on terms acceptable to us, or at all. Even if we are able to acquire or develop product candidates that address one of these mechanisms of action in preclinical studies, we may not succeed in demonstrating safety and efficacy of the product candidate in clinical trials. If we are unable to identify suitable compounds for preclinical and clinical development, we will not succeed in realizing our goal of a functional curative combination regimen for HBV. Our principal sources of liquidity are cash, cash equivalents and investments in marketable securities, which were $ ~~132~~ **122** . ~~3~~ **6** million as of December 31, ~~2023~~ **2024** . ~~We believe that our $ 132. 3 million of cash, cash equivalents and investments in marketable securities as of December 31, 2023 will be sufficient to fund our operations into the first quarter of 2026. However, changing circumstances may cause us to consume capital faster than we currently anticipate, and we may need to spend more money than currently expected because of such circumstances~~ . Within the next several years **and subject to the results of our review of our pipeline and development plans for our hepatitis B programs** , substantial additional funds ~~will~~ **would** be required to continue with the active development of our pipeline product candidates and technologies. In particular, our funding needs may vary depending on a number of factors including: • **the results of the review of our pipeline and development plans for our hepatitis B programs; • costs associated with prosecuting and enforcing our patent claims and other intellectual property rights, including our ongoing patent infringement matters against Moderna and Pfizer / BioNTech; •** revenues earned from our licensing partners, including Alnylam, Qilu and Acuitas; • the extent to which we continue the development of our product candidates or form licensing arrangements to advance our product candidates; • our decisions to in- license or acquire additional products, additional product candidates or technology for development; • our ability to attract and retain development or commercialization partners, and their effectiveness in carrying out the development and ultimate commercialization of one or more of our product candidates; • whether batches of product candidates that we manufacture fail to meet specifications resulting in clinical trial delays and investigational and remanufacturing costs; • the decisions, and the timing of decisions, made by health regulatory agencies regarding our technology and product candidates; **and** • competing products, product candidates and technological and market developments ~~; and • prosecuting and enforcing our patent claims and other intellectual property rights~~ . We ~~will~~ **may** seek to obtain funding to maintain and advance our business from a variety of sources including equity financings, debt financings, licensing agreements, partnerships, government grants and contracts and other strategic transactions and funding opportunities. There can be no assurance that we will be able to complete any such transaction on acceptable terms or otherwise. If we ~~are able to~~ raise additional capital through the issuance of equity securities, the percentage ownership of our current shareholders will be reduced. In addition, we may issue equity as part of the consideration to our licensors, to compensate consultants or to settle outstanding payables, all of which could cause our shareholders to experience additional dilution in net book value per share. Any such additional equity securities may have rights, preferences and privileges senior to

those of the holders of our common shares. Debt financing, if available, will result in increased fixed payment obligations and may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Any debt financing or additional equity that we raise may contain terms, such as liquidation and other preferences, which are not favorable to us or our existing shareholders. If we raise additional funds through corporate collaborations, partnerships or other strategic transactions, it may be necessary to relinquish valuable rights to our product candidates, our technologies or future revenue streams or to grant licenses or sell assets on terms that may not be favorable to us. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we will need to curtail and reduce our operations and costs, and modify our business strategy which may require us to, among other things: • significantly delay, scale back or discontinue the development or commercialization of one or more of our product candidates ~~or one or more of our research and development initiatives~~ ; • seek collaborators for one or more of our product candidates ~~or one or more of our research and development initiatives~~ at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available; • sell or license on unfavorable terms our rights to one or more of our technologies ~~,~~ **or** product candidates ~~or research and development initiatives~~ that we otherwise would seek to develop or commercialize ourselves; or • **seek a sale of the Company or** cease operations. With the exception of the years ended December 31, 2006 and December 31, 2012, we have incurred losses each fiscal year since inception through the year ended December 31, ~~2023~~ **2024** and have not received any revenues other than from research and development collaborations, royalties, license fees and milestone payments. From inception to December 31, ~~2023~~ **2024** , we have an accumulated net deficit of approximately $ 1. 3 billion. Investment in drug development is highly speculative because it entails substantial upfront capital expenditures and significant risk that a product candidate will fail to gain regulatory approval or become commercially viable. We continue to incur significant ~~research, development and other~~ expenses related to our ongoing operations, including development of our product candidates. We do not expect to achieve profits until such time as product sales, milestone payments and royalty payments, if any, generate sufficient revenues to fund our continuing operations. We cannot predict if we will ever achieve profitability and, if we do, we may not be able to remain consistently profitable or increase our profitability. We expect to continue to incur significant expenses and operating losses for the foreseeable future. We anticipate that our expenses will continue to be significant if and as we: • continue **the** ~~our research and preclinical and~~ clinical development of our ~~product~~ **products** candidates; • initiate additional ~~preclinical,~~ clinical **trials** or other studies or trials for our product candidates; • continue or expand our licensing arrangements with our licensing partners; • change or add additional manufacturers or suppliers; • seek regulatory approvals for our product candidates that successfully complete clinical trials; • establish a sales, marketing and distribution infrastructure to commercialize any product candidates for which we may obtain regulatory approval; • ~~seek to identify and validate additional product candidates; •~~ acquire or in- license other product candidates and technologies; • maintain, protect and expand our intellectual property portfolio; • attract and retain skilled personnel; • create additional infrastructure to support our ~~research,~~ product development and planned future commercialization efforts; and • experience any delays or encounter issues with any of the above. The net losses we incur may fluctuate significantly from quarter to quarter and year to year, such that a period- to- period comparison of our results of operations may not be a good indication of our future performance. We do not generate revenues from product sales and may never be profitable. Our ability to generate revenue and achieve profitability depends on our ability, alone or with strategic partners, to successfully complete the development of, and obtain the regulatory approvals necessary for, the manufacture and commercialization of our product candidates. We do not anticipate generating significant 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 approvals for product candidates for which we complete clinical trials; • developing a sustainable, scalable, reproducible, and transferable manufacturing process for our 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 clinical development and the market demand for our product candidates for which we obtain regulatory approval; • launching and commercializing product candidates for which we obtain regulatory approval, either by collaborating with partners or, if launched independently, by establishing a sales force, marketing, sales operations and distribution infrastructure; • obtaining market acceptance of our product candidates for which we obtain regulatory approval as viable treatment options; • addressing any competing technological and market developments; • implementing additional internal systems and infrastructure, as needed; • identifying and validating new product candidates; • negotiating favorable terms in any collaboration, licensing or other arrangements into which we may enter; • maintaining, protecting and expanding our portfolio of intellectual property rights, including patents, trade secrets and know- how; and • attracting, hiring and retaining qualified personnel. Even if one or more of the product candidates that we 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 or other regulatory authorities outside the United States to perform clinical trials or other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved product candidates, we may not become profitable and may need to obtain additional funding to continue operations. Our product candidates are in early stages of development and must go through clinical trials, which are very expensive, time- consuming and difficult to design and implement. The outcomes of clinical trials are uncertain, and delays in the completion of or the termination of any clinical trial of our product candidates could harm our business, financial condition and prospects. Our ~~research and~~ development programs are at an early stage of development. We must demonstrate our product candidates' safety and efficacy in humans through extensive clinical testing, which is expensive and time- consuming and requires specialized knowledge and expertise. Clinical trials are also expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process is also time- consuming, and the outcome is not certain. We estimate that clinical trials of our product candidates will take multiple years to complete. Failure can occur at

any stage of a clinical trial, and we could encounter problems that cause us to abandon or repeat clinical trials. The commencement and completion of clinical trials may be delayed or precluded by a number of factors, including: • delay or failure in reaching agreement with the FDA or other regulatory ~~authority~~ **authorities** outside the United States on the design of a given trial, or in obtaining authorization to commence a trial; • delay or failure in reaching agreement on acceptable terms with prospective CROs and clinical trial sites; • delay or failure in obtaining approval of an IRB or ethics committees before a clinical trial can be initiated at a given site; • withdrawal of clinical trial sites from our clinical trials, including as a result of changing standards of care or the ineligibility of a site to participate; • delay or failure in recruiting and enrolling subjects in our clinical trials; • delay or failure in having subjects complete a clinical trial or return for post- treatment follow up; • clinical sites or investigators deviating from trial protocol, failing to conduct the trial in accordance with applicable regulatory requirements, or dropping out of a trial; • inability to identify and maintain a sufficient number of trial sites; • failure of CROs to meet their contractual obligations or deadlines; • the need to modify a trial protocol; • unforeseen safety issues; • emergence of dosing issues; • lack of effectiveness data during clinical trials; • changes in the standard of care of the indication being studied; • reliance on third- party suppliers for the clinical trial supply of product candidates and failure by our third- party suppliers to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all; • inability to monitor subjects adequately during or after treatment; • limitations on our or our CROs' ability to access and verify clinical trial data captured at clinical trial sites through monitoring and source document verification; • lack of sufficient funding to finance the clinical trials; and • changes in governmental regulations or administrative action. We, the FDA, other regulatory authorities outside the United States, or an IRB may suspend a clinical trial at any time for various reasons, including if it appears that the clinical trial is exposing participants to unacceptable health risks or if the FDA or one or more other regulatory authorities outside the United States find deficiencies in our IND or similar application outside the United States or the conduct of the trial. If we experience delays in the completion of, or the termination of, any clinical trial of any of our product candidates, the commercial prospects of such product candidate will be harmed, and our ability to generate product revenues from such product candidate will be delayed or rendered impossible. In addition, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process, and jeopardize our ability to commence product sales and generate revenues. Even if our clinical trials are successfully completed as planned, the results may not support approval of our product candidates under the laws and regulations of the FDA or other regulatory authorities outside the United States. The clinical trial process may fail to demonstrate that our product candidates are both safe and effective for their intended uses. Preclinical and clinical data and analyses are often able to be interpreted in different ways. Even if we view our results favorably, if a regulatory authority has a different view, we may still fail to obtain regulatory approval of our product candidates. Any of these occurrences may harm our business, financial condition, results of operations, cash flows and prospects significantly. Preclinical studies and preliminary and interim data from clinical trials of our product candidates are not necessarily predictive of the results or success of ongoing or later clinical trials of our product candidates. If we cannot replicate the results from our preclinical studies and initial clinical trials of our product candidates in later clinical trials, we may be unable to successfully develop, obtain regulatory approval for and commercialize our product candidates. Preclinical studies and any positive preliminary and interim data from our clinical trials of our product candidates may not necessarily be predictive of the results of ongoing or later clinical trials. A number of companies in the pharmaceutical and biotechnology industries, including us and many other companies with greater resources and experience than we, have suffered significant setbacks in clinical trials, even after seeing promising results in prior preclinical studies and clinical trials. Even if we are able to complete our planned clinical trials of our product candidates according to our current development timeline, initial positive results from preclinical studies and clinical trials of our product candidates may not be replicated in subsequent clinical trials. The design of our later stage clinical trials could differ in significant ways (e. g., inclusion and exclusion criteria, endpoints, statistical analysis plan) from our earlier stage clinical trials, which could cause the outcomes of the later stage trials to differ from those of our earlier stage clinical trials. If we fail to produce positive results in our planned clinical trials of any of our product candidates, the development timeline and regulatory approval and commercialization prospects for our product candidates, and, correspondingly, our business and financial prospects, would be materially adversely affected. We are an early- stage company with limited resources and revenues. The product candidates we currently have under development will require significant development, preclinical and clinical testing and investment of significant funds before their commercialization. Because of this, we must make strategic decisions regarding resource allocations and which product candidates to pursue. There can be no assurance that we will be able to develop all potentially promising product candidates that we may identify. Based on preliminary results, we may choose to advance a particular product candidate that later fails to be successful, and simultaneously forgo or defer further investment in other product candidates that later are discovered to demonstrate greater promise in terms of clinical and commercial success. If we make resource allocation decisions that later are shown to be inaccurate, our business and prospects could be harmed. Several of our current ~~preclinical studies and~~ clinical trials are being conducted outside the United States and we may conduct further ~~preclinical studies and~~ clinical trials outside the United States in the future. We are currently conducting clinical trials in the United States, Moldova, ~~Thailand,~~ Taiwan, South Korea, Hong Kong, the United Kingdom **, Romania, Singapore, Italy, Canada, Ukraine** , Australia and New Zealand, among other countries. To the extent we do not conduct these clinical trials under an IND, the FDA may not accept data from such trials. Although the FDA may accept data from clinical trials conducted outside the United States that are not conducted under an IND, the FDA' s acceptance of these data is subject to certain conditions. For example, the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with ethical principles. The trial population must also adequately represent the United States population, and the data must be applicable to the United States population and United States medical practice in ways that the FDA deems clinically meaningful. In general, the patient population for any clinical trials conducted outside of the United States must be representative of the population for whom we intend to label the product in the United States. In addition,

while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its ability to verify the data and its determination that the trials complied with all applicable United States laws and regulations. We cannot assure you that the FDA will accept data from trials conducted outside of the United States that are not conducted under an IND. If the FDA does not accept the data from such clinical trials, we likely would need to conduct additional trials, which would be costly and time- consuming and could delay or permanently halt our development of our product candidates. We cannot guarantee how long it will take regulatory agencies to review our applications for product candidates, and we may fail to obtain the necessary regulatory approvals to market our product candidates. Before we can commercialize our product candidates in the United States, we must obtain approval from the FDA. We must similarly obtain approvals from comparable regulatory authorities to commercialize our product candidates in jurisdictions outside the United States. To obtain marketing approval, United States laws require: • controlled research and human clinical testing that comply with GLP and GCP, as applicable; • establishment of the safety and efficacy of the product for each use sought; • government review and approval of a submission containing, among other things, manufacturing, preclinical and clinical data; and • compliance with GMP regulations. The process of reviewing and approving a drug is time- consuming, unpredictable, and dependent on a variety of factors outside of our control. The FDA and corresponding regulatory authorities in jurisdictions outside the United States have a significant amount of discretion in deciding whether or not to approve a marketing application. Our product candidates could fail to receive regulatory approval from the FDA or comparable regulatory authorities outside the United States for several reasons, including: • disagreement with the design or implementation of our clinical trials; • failure to demonstrate that our product ~~candidate~~ **candidates** ~~is~~ **are** safe and effective for the proposed indication; • failure of clinical trial results to meet the level of statistical significance required for approval; • failure to demonstrate that the product ~~candidate~~ **candidates** ' ~~s~~ benefits outweigh its **'** risks; • disagreement with our interpretation of preclinical or clinical data; and • inadequacies in the manufacturing facilities or processes of third- party manufacturers. The FDA or comparable regulatory authorities outside the United States may require us to conduct additional preclinical and clinical testing, which may delay or prevent approval of a product candidate and our commercialization plans, or cause us to abandon the development program. Further, any approval we receive may be for fewer or more limited indications than we request, may not include labeling claims necessary for successful commercialization of the product candidate, or may be contingent upon our conducting costly post- marketing studies. Any of these scenarios could materially harm the commercial prospects of a product candidate, and our operations will be adversely effected **. The ability of the FDA to review and approve new products or review other regulatory submissions can be affected by a variety of factors, including statutory, regulatory and policy changes, inadequate government budget and funding levels, a reduction in the FDA' s workforce and its ability to hire and retain key personnel. Disruptions at the FDA and other agencies may also increase the time to meet with and receive agency feedback, review and / or approve our submissions, conduct inspections, issue regulatory guidance, or take other actions that facilitate the development, approval and marketing of regulated products, which would adversely affect our business. In addition, government proposals to reduce or eliminate budgetary deficits may include reduced allocations to the FDA and other related government agencies. For example, the current presidential administration recently established the Department of Government Efficiency, which implemented a federal government hiring freeze and announced certain additional efforts to reduce federal government employee headcount and the size of the federal government. It is unclear how these executive actions or other potential actions by the presidential administration or other parts of the federal government will impact the FDA or other regulatory authorities that oversee the product development portion of our business. These budgetary pressures may reduce the FDA' s ability to perform its responsibilities. If a significant reduction in the FDA' s workforce occurs, the FDA' s budget is significantly reduced or a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions or take other actions critical to the development or marketing of our products, if approved, which could have a material adverse effect on our business** . We may experience numerous unforeseen events during, or as a result of, the testing process that could delay or prevent commercialization of any of our product candidates, including the occurrence of undesirable side effects. Such side effects could lead to clinical trial challenges, such as difficulties in subject recruitment, retention, and adherence, potential product liability claims, and possible termination by health authorities. These types of clinical trial challenges could in turn, delay or prevent regulatory approval of our product candidate. Side effects may also lead regulatory authorities to require stronger product warnings on the product label, costly post- marketing studies, and / or a Risk Evaluation and Mitigation Strategy (REMS), among other possible requirements. If the product candidate has already been approved, such approval may be withdrawn. Any delay in, denial, or withdrawal of marketing approval for one of our product candidates will adversely affect our business, including our results of operations and financial position. Even if one or more of our product candidates receives marketing approval, undesirable side effects may limit such product' s commercial viability. Patients may not wish to use our product, physicians may not prescribe our product, and our reputation may suffer. Any of these events may significantly harm our business and financial prospects. We may find it difficult to enroll patients in our clinical trials, which could delay or prevent clinical trials of our product candidates. Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing of our clinical trials depends in part on the speed at which we can recruit patients to participate in testing our product candidates. We may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics to achieve diversity in a clinical trial, or complete our clinical trials in a timely manner. Subject enrollment is affected by a variety **of** factors including, among others: • severity of the disease under investigation; • design of the trial protocol; • prevalence of the disease / size of the patient population; • eligibility criteria for the clinical trial in question; • perceived risks and benefits of the product candidate under study; • willingness or availability of patients to participate in the clinical trials; • proximity and availability of clinical trial sites for prospective patients; • ability to recruit clinical trial investigators with the appropriate competencies and experience; • availability of competing therapies and

clinical trials; • efforts to facilitate timely enrollment in clinical trials; • ability to obtain and maintain subject consents; • patient referral practices of physicians; • risk that patients enrolled in clinical trials will drop out of the trials before completion; and • ability to monitor patients adequately during and after treatment. If patients are unwilling to participate in our clinical trials, the timeline for recruiting patients, conducting clinical trials and obtaining regulatory approval of potential products may be delayed. These delays could result in increased costs, delays in advancing or testing our product candidates or termination of the clinical trials altogether. On April 25, 2023, we announced that we were notified via verbal communication from the FDA that our AB- 101 IND application ~~has~~ **had** been placed on clinical hold, meaning we must suspend any ongoing clinical investigation **in the United States** , may not recruit ~~new~~ subjects to the ~~study~~ **clinical trial in the United States** , and may not administer AB- 101 to any subjects in the United States. For purposes of clarity, the Phase 1 clinical trial **in the United States** had not been initiated and we had not dosed any patients with AB- 101. In May 2023, we received the clinical hold letter from the FDA, which raised questions about certain preclinical data and aspects of the clinical trial design. In July 2023, Medsafe approved our CTA application for a Phase 1 clinical trial in New Zealand for AB- 101; however, there are no assurances that FDA will accept the results of such clinical trial and may require us to conduct an additional Phase 1 clinical trial or additional nonclinical studies. If the FDA does not accept the results of our Phase 1 clinical trial in New Zealand for AB- 101 or requires us to conduct additional trials or studies, it may take a considerable period of time, the length of which is not certain at this time, and expense for us to fully address the FDA' s concerns. Even if we are able to fully respond to the FDA' s current concerns, the FDA may subsequently make additional requests that we would need to fulfill prior to the lifting of the clinical hold. It is possible that we will be unable to fully address the FDA' s concerns and, as a result, the clinical hold may never be lifted and we may never be able to initiate our AB- 101 clinical program in the United States, which could have a material adverse effect on our business and financial prospects. In February 2022, Russia commenced a military invasion of Ukraine. **Our Phase 1** ~~A portion of our~~ clinical trial ~~evaluating~~ **for** AB- **101** ~~836 and a cohort of Antios Therapeutics, Inc.' s~~ (~~Antios~~ **AB- 101- 001**) **has a** clinical trial **site** ~~evaluating a triple combination including imdusiran were being conducted~~ in Ukraine ~~at that time~~ . **The military action** ~~We had also planned to conduct a portion of the following clinical trials~~ in Ukraine **could disrupt** ~~: (i)~~ our ~~Phase 2a~~ **ongoing AB- 101- 001** clinical trial ~~evaluating imdusiran in combination with ongoing NA therapy and short courses of PEG- IFNα- 2a in cHBV infected patients and (ii) our planned Phase 2a clinical trial to evaluate a triple combination of imdusiran with Barinthus' s VTP- 300 and an NA therapy. As a result of such military invasion, we intend to utilize alternative clinical trial sites for our ongoing and planned clinical trials impacted by the military action in Ukraine. Russia' s invasion and the ensuing response by Ukraine has disrupted our and our collaboration partners' current clinical trials in such jurisdictions~~ and could increase our costs and disrupt future planned clinical development activities ~~. For example, enrollment was completed in a cohort of patients in Antios' ongoing Phase 2a proof- of- concept clinical trial evaluating a triple combination of imdusiran, Antios' proprietary Active Site Polymerase Inhibitor Nucleotide (ASPIN), ATI- 2173, and Viread (tenofovir disoproxil fumarate), a nucleos (t) ide reverse transcriptase inhibitor. However, the majority of patients in this cohort were enrolled in Ukraine and, as a result, these patients have been lost to follow- up before completing the clinical trial. Antios terminated this clinical trial and we have terminated our clinical collaboration agreement with Antios~~ . Although the length and impact of Russia' s military action is highly unpredictable, actions by Russia, or potentially other countries, against Ukraine and surrounding areas may adversely affect our ability to adequately conduct ~~or~~ **our** ~~complete certain~~ **ongoing AB- 101- 001** clinical trials and maintain compliance with relevant protocols due to, among other reasons, the prioritization of hospital resources away from clinical trials, reallocation or evacuation of site staff and subjects, or as a result of government- imposed curfews, warfare, violence, or other governmental action or events that restrict movement. These developments may also result in our inability to access **our clinical trial** ~~sites~~ - **site in Ukraine** for monitoring or to obtain data from ~~affected~~ **such** ~~sites~~ - **site** or ~~patients~~ **subjects** going forward. We could also experience disruptions in our supply chain or limits to our ability to provide sufficient investigational materials in Ukraine ~~and surrounding regions~~ . Alternative sites to fully and timely compensate for our clinical trial activities in Ukraine may not be available and we may need to find other countries to conduct ~~these~~ **our AB- 101- 001** clinical trials. If ~~these~~ **our AB- 101- 001** clinical ~~trials~~ - **trial is** ~~are further~~ interrupted, our clinical development plans for ~~these product candidates~~ **AB- 101** could be significantly delayed, which would increase our costs, slow down our ~~product candidate~~ **AB- 101** development and approval process and jeopardize our ability to commence product sales and generate revenues. Even if our product candidates obtain regulatory approval, they will remain subject to ongoing regulatory requirements and oversight. Approved drug products are subject to ongoing regulatory requirements and oversight, including requirements related to manufacturing, quality control, further development, labeling, packaging, storage, distribution, safety surveillance, import, export, advertising, promotion, recordkeeping and reporting. In addition, we will be subject to continued compliance with GMP and GCP requirements for any clinical trials that we conduct post- approval. If we or any of the third parties on which we rely fail to meet those requirements, the FDA or comparable regulatory authorities outside the United States could initiate enforcement actions. ~~Other potential~~ **Potential** consequences include the issuance of fines, warning letters, untitled letters or holds on clinical trials, product seizure or detention or refusal to permit the import or export of our product candidates, permanent injunctions and consent decrees, or the imposition of civil or criminal penalties, any of which could significantly impair our ability to successfully commercialize a given product. If the FDA or a comparable regulatory authority outside the United States becomes aware of new safety information, it can impose additional restrictions on how the product is marketed or may seek to withdraw marketing approval altogether. Further, the **United States** ~~U. S.~~ and state governments have shown significant interest in establishing cost containment measures to limit the growth of government- paid health care costs, including price controls, restrictions on reimbursement, and requirements for substitution of generic products for branded prescription drugs. For example, the Patient Protection and Affordable Care Act, as amended (the ACA), intended to reduce the cost of health care, and it has substantially changed the way health care is financed by both government and private insurers. While we cannot predict with certainty what impact on federal and other reimbursement policies this legislation will have in general or on our business specifically, the ACA

may result in downward pressure on pharmaceutical reimbursement, which could negatively affect market acceptance of, and the price we may charge for, any products we develop that receives regulatory approval. Legislative changes to and regulatory changes under the ACA remain possible, but the nature and extent of such potential additional changes are uncertain at this time. **Further, the Inflation Reduction Act (IRA), among other things, established Medicare Part B and Part D inflation rebate schemes under which, generally, manufacturers will owe rebates if the average sales price of certain Part B drugs, or the average manufacturer price of certain covered Part D drugs, increases faster than the pace of inflation, and a drug price negotiation program under which the prices for certain Medicare units of certain high Medicare spend drugs and biologics without generic or biosimilar competition will be capped by reference to, among other things, a specified non-federal average manufacturer price, beginning in 2026.** We expect that the ACA, its implementation, efforts to modify or invalidate the ACA, or portions thereof, **the IRA** ~~or its implementation~~ , and other healthcare reform measures, including those that may be adopted in the future, could have a material adverse effect on our industry generally and on our ability to successfully commercialize our product candidates, if approved. Additionally, individual states in the **United States** ~~U. S.~~ have passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including sometimes establishing Prescription Drug Affordability Boards (or similar entities) to review high- cost drugs and, in some cases, set upper payment limits and implementing marketing cost disclosure and transparency measures. The marketability of any products for which we receive regulatory approval for commercial sale may suffer if the **United States or other** government and third- party payors fail to provide adequate coverage and reimbursement. In addition, cost containment measures in the United States has been an area ~~or~~ **of** increasing emphasis, and we expect they will continue to increase the pressure on pharmaceutical pricing. Coverage policies and third- party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be adopted in the future. As a significant unmet medical need exists for HBV, there are several large and small pharmaceutical companies focused on delivering therapeutics for treatment of HBV. These companies include, but are not limited to ~~Roche,~~ Vir Biotechnology, GlaxoSmithKline, Gilead Sciences, Assembly, ~~Enanta Pharmaceuticals,~~ Aligos Therapeutics, ~~Barinthus~~ **Bluejay Therapeutics** , ~~Asclepis Pharma~~ **Inc., AusperBio Therapeutics** , Inc. and Brii Biosciences Ltd ~~.~~. Further, in addition to current investigational therapeutics in development, it is likely that additional drugs will become available in the future for the treatment of HBV. Many of our existing or potential competitors have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of product candidates, as well as in obtaining regulatory approvals of those product candidates in the United States and other countries. Many of our current and potential future competitors also have significantly more experience commercializing drugs that have been approved for marketing. We anticipate significant competition in the HBV market, with several early and late phase product candidates announced. ~~We will also face competition for other product candidates that we expect to develop in the future.~~ Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors may succeed in developing, acquiring or licensing, on an exclusive basis, product candidates that are more effective or less costly than any product candidate that we may develop. If we successfully develop product candidates, and obtain approval for them, we will face competition based on many different factors, including the following: • safety and effectiveness of our products; • ease with which our products can be administered and the extent to which patients and physicians accept new routes of administration; • timing and scope of regulatory approvals for these products; • availability and cost of manufacturing, marketing and sales capabilities; • price; • reimbursement coverage; and • patent position **and regulatory exclusivities** . Our competitors may develop or commercialize products with significant advantages over any products we develop based on any of the factors listed above, or on other factors. Our competitors may therefore be more successful in commercializing their products than we are, which could adversely affect our competitive position and business. Competitive products may make any products we develop and commercialize obsolete or uncompetitive before we can recover the expenses of developing and commercializing such products. Such competitors could also recruit our employees, which could negatively impact our level of expertise and the ability to execute on our business plan. Our ability to generate revenues and become profitable will depend in large part on the future commercial success of our HBV product candidates, if ~~they are~~ approved ~~for marketing~~ . If any product that we commercialize in the future does not gain an adequate level of acceptance among physicians, patients and third parties, or our estimates of the number of people who have cHBV infection are lower than expected, we may not generate significant product revenues or become profitable. Market acceptance by physicians, patients and third **-** party payors of the products we may commercialize will depend on a number of factors, some of which are beyond our control, including: • their efficacy, safety and other potential advantages in relation to alternative treatments; • their relative convenience and ease of administration in relation to alternative treatments; • the availability of adequate coverage or reimbursement by third parties, such as insurance companies and other healthcare payors, and by government healthcare programs, including Medicare and Medicaid; • the prevalence and severity of adverse events; • their cost of treatment in relation to alternative treatments, including generic products; • the extent and strength of our third **-** party manufacturer and supplier support; • the extent and strength of marketing and distribution support; • the limitations or warnings contained in a product' s approved labeling; and • distribution and use restrictions imposed by the FDA or other regulatory authorities outside the United States or that are part of a REMS or voluntary risk management plan. For example, even if our products have been approved by the FDA **or comparable foreign regulatory authorities** , physicians and patients may not immediately be receptive to them and may be slow to adopt them. If our products do not achieve an adequate level of acceptance among physicians, patients and third **-** party payors, we may not generate meaningful revenues and we may not become profitable. The testing and marketing of medical products entail an inherent risk of product liability. Product liability claims may be brought against us by patients, healthcare providers or others using, administering or selling our products. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side

effects, which is an example of just one possible product liability claim that may be brought against us. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products. Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop, alone or with partners. Although we currently have product liability insurance coverage for our clinical trials for expenses or losses, our insurance coverage is limited to $ 10 million per occurrence, and $ 10 million in the aggregate, and may not reimburse us or may not be sufficient to reimburse us for any or all expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive and **,** in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. We intend to expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products approved for marketing. Further, even if our agreements with any current or future partners entitle us to indemnification against losses, such indemnification may not be available or adequate should any claims arise. A successful product liability claim or series of claims brought against us could cause our share price to fall and, if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business. Market acceptance and sales of any products that we develop **and receive approval for** will depend in part on the extent to which reimbursement for these products and related treatments will be available from third **-** party payors, including government health administration authorities and private health insurers. Third **-** party payors decide which drugs they will pay for and establish reimbursement levels. Third **-** party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. However, decisions regarding the extent of coverage and amount of reimbursement to be provided for each of our products will be made on a plan by plan basis. One payor' s determination to provide coverage for a product does not assure that other payors will also provide coverage, and adequate reimbursement, for the product. Additionally, a third **-** party payor' s decision to provide coverage for a drug does not imply that an adequate reimbursement rate will be approved. Each plan determines whether or not it will provide coverage for a drug, what amount it will pay the manufacturer for the drug, and on what tier of its formulary the drug will be placed. The position of a drug on a formulary generally determines the copayment that a patient will need to make to obtain the drug and can strongly influence the adoption of a drug by patients and physicians. Patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third **-** party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products. A primary trend in the United States healthcare industry and elsewhere is cost containment. Third **-** party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. We cannot be sure that coverage and reimbursement will be available for any product that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Inadequate coverage and reimbursement may impact the demand for, or the price of, any product for which we obtain marketing approval. If coverage and adequate reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize any product candidates that we develop. Additionally, there have been a number of legislative and regulatory proposals to change the healthcare system in the United States and in some jurisdictions outside the United States that could affect our ability to sell any future products profitably. These legislative and regulatory changes may negatively impact the reimbursement for any future products, following approval. We are subject to United States and Canadian healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages and reputational harm. fines, disgorgement, exclusion from participation in ~~government~~ **United States federal** healthcare programs, curtailment or restricting of our operations and diminished profits and future earnings. Healthcare providers, physicians and others will play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. Our future arrangements with healthcare providers, patients and third **-** party payors will expose us to broadly applicable United States and Canadian fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and collaborative partners through which we market, sell and distribute any products for which we obtain marketing approval. Restrictions under applicable **United States** federal and state healthcare laws and regulations are described in further detail in the section entitled Government Regulation – Post- Approval Regulation and include the following: • the **United States** ~~U. S.~~ federal Anti- Kickback Law prohibits persons from, among other things, knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, the referral of an individual for the furnishing or arranging for the furnishing, or the purchase, lease or order, or arranging for or recommending purchase, lease or order, any good or service for which payment may be made under a federal healthcare program such as Medicare and Medicaid; • the **United States** ~~U. S.~~ federal civil False Claims Act imposes civil penalties, sometimes pursued through whistleblower or qui tam actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented claims for payment of government funds that are false or fraudulent or making a false statement material to an obligation to pay money to the government **,** or knowingly concealing or knowingly and improperly avoiding, decreasing, or concealing an obligation to pay money to the federal government; • HIPAA imposes criminal liability for knowingly and willfully executing a scheme to defraud any healthcare benefit program, knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false fictitious or fraudulent statement or entry, in connection with the delivery of or payment for healthcare benefits, items or services; • HIPAA and its implementing regulations also impose obligations on certain covered entity health care providers, health plans and health care clearinghouses as well as their business associates **(e. g., persons or entities** that ~~perform certain services involving the use~~ **create, receive, maintain,** or **transmit protected** ~~disclosure of individually identifiable~~ health information **in connection** ~~, including mandatory contractual terms,~~ with ~~respect to safeguarding the privacy, security and~~

~~transmission~~ **providing a specified service or performing a function on behalf** of ~~individually identifiable health information~~ **a covered entity)** . 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. Although we are not directly subject to HIPAA — other than with respect to providing certain employee benefits — we could potentially be subject to criminal penalties if we, our affiliates, or our agents knowingly receive individually identifiable health information maintained by a HIPAA- covered entity in a manner that is not authorized or permitted by HIPAA; • numerous federal and state laws and regulations that address privacy and data security, including state data breach notifications laws, state health information and / or genetic privacy laws, **artificial intelligence laws passed in the United States,** and federal and state consumer protection laws (e. g., Section 5 of the FTC Act, **and the Health Breach Notification Rule,** the CCPA **, as amended by the CPRA**), govern the collection, use, disclosure and protection of health- related and other personal information, many of which differ from each other in significant ways, thus complicating the compliance efforts. Compliance with these laws is difficult, constantly evolving, and time- consuming, and companies that do not comply with these laws may face government enforcement actions, civil and / or criminal penalties, or private action, as well as adverse publicity that could negatively affect our operating results and business; • activities outside of the **United States** ~~U. S.~~ implicate local and national data protection standards, impose additional compliance requirements and generate additional risks of enforcement for non- compliance. The European Union' s GDPR **, including as implemented in the United Kingdom** and other data protection, privacy and similar national, state / provincial and local laws **, including the EU AI Act,** may restrict the access, use, storage, disclosure or other processing activities concerning patient health information abroad. Compliance efforts will likely be an increasing and substantial cost in the future **. Compliance efforts will likely be an increasing and substantial cost in the future** ; • the **United States** ~~U. S.~~ federal Physician Payment Sunshine Act, being implemented as the Open Payments Program, ~~which~~ requires manufacturers of drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid or the Children' s Health Insurance Program (with certain exceptions) to report annually to CMS information related to direct or indirect payments and other transfers of value to physicians, certain other practitioners, and teaching hospitals, as well as ownership and investment interests held in the company by physicians and their immediate family members; • price reporting requirements under the Medicaid Drug Rebate Program and the 340B Program and with respect to average sales price reporting under the Medicare Part B program, and rebate or discount liability under the Medicaid Drug Rebate Program, the 340B Program, and Medicare Part D, with respect to which we could be subject to civil monetary penalties for a failure to comply with our reporting or rebate or discount obligations, or termination from the Medicaid Drug Rebate Program or 340B program, which, in turn, could jeopardize the availability of federal funds for our products under Medicaid and Medicare Part B; • the IRA, which, among other things, requires the **United States** ~~U. S.~~ Secretary of Health and Human Services to negotiate, with respect to Medicare units and subject to a specified cap, the price of a set number of certain high Medicare spend drugs and biologicals per year starting in 2026, penalizes manufacturers of certain Medicare Parts B and D drugs for price increases above inflation, and makes several changes to the Medicare Part D benefit, including a limit on annual out- of- pocket costs, and a change in manufacturer liability under the program which could negatively affect our business and financial condition; and • analogous state laws and laws and regulations outside the United States, such as state anti- kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non- governmental third- party payors, including private insurers; state laws and laws outside the United States that require pharmaceutical companies to comply with the pharmaceutical industry' s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to certain healthcare providers; state laws and laws outside the United States that require drug manufacturers to report information related to clinical trials, or information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; state laws that restrict the ability of manufacturers to offer co- pay support to patients for certain prescription drugs; and state laws and local ordinances that require identification or licensing of sales representatives. Efforts to ensure that our collaborations with third parties, and our business generally, will comply with applicable United States and Canadian healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental laws and regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion of products from ~~government funded~~ **United States federal** healthcare programs, contractual damages, reputational harm, disgorgement, curtailment or restricting of our operations, any of which could substantially disrupt our operations and diminish our profits and future earnings. If any of the physicians or other providers or entities with whom we expect to do business is found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs. The risk of our being found in violation of these laws is increased by the fact that many of them ~~have not been fully interpreted~~ **are subject to evolving interpretation and application** by ~~the~~ **courts and enforcement and** regulatory authorities ~~or~~ **. If we participate in** the ~~courts,~~ **Medicaid Drug Rebate Program** and ~~their~~ **other** ~~provisions are open~~ **governmental pricing programs, failure** to **comply with obligations under these programs could result in additional reimbursement requirements, penalties, sanctions and fines, which could have** a ~~variety~~ **material adverse effect on our business, financial condition, results** of ~~interpretations~~ **operations and growth prospects** . Under the Medicaid Drug Rebate program, a participating manufacturer is required to pay a rebate to each state Medicaid program for its covered outpatient drugs that are dispensed to Medicaid beneficiaries and paid for by the state Medicaid program as a condition of having federal funds being made available for drugs under Medicaid and Medicare Part B. Those rebates are based on pricing data reported by the manufacturer on a monthly and quarterly basis to CMS. These data include the average manufacturer price and, in the case of innovator products, the best price for each drug, which, in general, represents the

lowest price available from the manufacturer to any wholesaler, retailer, provider, health maintenance organization, nonprofit entity, or governmental entity in the **United States** ~~U. S.~~ in any pricing structure, calculated to include all sales and associated rebates, discounts, and other price concessions. If we fail to pay the required rebate amount or report pricing data on a timely basis, we may be subject to civil monetary penalties and / or termination from the Medicaid Drug Rebate program. Additionally, civil monetary penalties can be applied if we are found to have knowingly submitted any false price or product information to the government, if we fail to submit the required price data on a timely basis, or if we misclassify or misreport product information. CMS could also decide to terminate any Medicaid drug rebate agreement, in which case federal payments may not be available under Medicaid or Medicare Part B for our covered outpatient drugs, if commercialized. The ACA made significant changes to the Medicaid Drug Rebate Program, and CMS issued a final regulation to implement the changes to the Medicaid Drug Rebate Program under the ACA. CMS also issued a final regulation that modified prior Medicaid Drug Rebate Program regulations to permit reporting multiple best price figures with regard to value- based purchasing arrangements; and provide definitions for " line extension, " " new formulation, " and related terms, with the practical effect of expanding the scope of drugs considered to be line extensions that are subject to an alternative rebate formula. While the regulatory provisions that purported to affect the applicability of the best price and average manufacturer price exclusions of manufacturer- sponsored patient benefit programs, in the context of pharmacy benefit manager (PBM) " accumulator " programs were invalidated by a court, such programs (including copayment " maximizer " programs) may continue to negatively affect us in other ways. Our failure to comply with these price reporting and rebate payment **obligations** ~~options, as well as PBM " accumulator " programs (including copayment " maximizer " programs),~~ could negatively impact our financial results. Federal law requires that a manufacturer also participate in the 340B Drug Pricing program in order for federal funds to be available for the manufacturer' s drugs under Medicaid and Medicare Part B. The 340B program requires participating manufacturers to agree to charge no more than the 340B " ceiling price " for the manufacturer' s covered outpatient drugs to a specified " covered entities, " including community health centers and other entities that receive certain federal grants, as well as hospitals that serve a disproportionate share of low- income patients. The 340B ceiling price is calculated using a statutory formula, which is based on the average manufacturer price and rebate amount for the covered outpatient drug as calculated under the Medicaid Drug Rebate Program. If we are found to have knowingly and intentionally charged 340B covered entities more than the statutorily mandated ceiling price for any of our commercialized products, we could be subject to significant civil monetary penalties and / or such failure also could be grounds for HRSA to terminate our agreement to participate in the 340B program, in which case our covered outpatient drugs, once commercialized, would no longer be eligible for federal payment under the Medicaid or Medicare Part B program. Further, the IRA establishes a Medicare Part **B and Part** D inflation rebate scheme ~~(the first rebate period is in fourth quarter 2022 through third quarter 2023)~~ and a drug price negotiation program, with the first negotiated prices to take effect in 2026. It also makes several changes to the Medicare Part D benefit, including the creation of a new manufacturer discount program in place of the current coverage gap discount program (beginning in 2025). Manufacturers may be subject to civil monetary penalties for certain violations of the negotiation and inflation rebate provisions and an excise tax during a noncompliance period under the negotiation program. Drug manufacturers may also be subject to civil monetary penalties with respect to their compliance with the new Part D manufacturer drug discount program. Pricing and rebate calculations are complex, vary across products and programs, and are often subject to interpretation by the manufacturer, governmental agencies, and courts. A manufacturer that becomes aware that its Medicaid reporting for a prior quarter was incorrect, or has changed as a result of recalculation of the pricing data, is obligated to resubmit corrected data up to three years after those data originally were due. Restatements and recalculations increase the costs for complying with the laws and policies governing the Medicaid Drug Rebate program and could result in an overage or underage in our rebate liability for past quarters. They also may affect the 340B ceiling price and therefore liability under the 340B program. Finally, in order to be eligible to have its products paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by the Big Four Agencies and certain federal grantees, a manufacturer is required to participate in the FSS pricing program, established under Section 603 of the Veterans Health Care Act of 1992. Under this program, the manufacturer is obligated to make its covered drugs available for procurement on an FSS contract and charge a price to the Big Four Agencies that is no higher than the FCP, which is a price calculated pursuant to a statutory formula. The FCP is derived from a calculated price point called the Non- FAMP, which the manufacturer calculates and reports to the VA on a quarterly and annual basis. Pursuant to applicable law, knowing provision of false information in connection with a Non FAMP filing can subject a manufacturer to significant penalties for each item of false information. The FSS contract also contains extensive disclosure and certification requirements. If we overcharge the government in connection with the FSS contract or Tricare Retail Pharmacy Rebate Program, whether due to a misstated FCP or otherwise, we will be required to refund the difference to the government. Failure to make necessary disclosures and / or to identify contract overcharges can result in allegations against us under the False Claims Act and other laws and regulations. Unexpected refunds to the government, and any response to government investigation or enforcement action, would be expensive and time- consuming, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects. Under Section 703 of the National Defense Authorization Act for FY 2008, the manufacturer is required to pay quarterly rebates to DoD on utilization of its innovator products that are dispensed through DoD' s Tricare network pharmacies to Tricare beneficiaries. The rebates are calculated as the difference between the annual Non FAMP and FCP for the calendar year that the product was dispensed. A manufacturer that overcharges the government in connection with the FSS contract or Tricare Retail Pharmacy Rebate Program, whether due to a misstated FCP or otherwise, is required to refund the difference to the government. Failure to make necessary disclosures and / or to identify contract overcharges can result in allegations against us under the False Claims Act and other laws and regulations. Failure to comply with the United States Foreign Corrupt Practices Act (FCPA), and potentially other global anti- corruption and anti- bribery laws such as the Canadian Corruption of Foreign Public Officials Act, could subject us to penalties and other adverse consequences. We are subject to the

FCPA, and potentially other applicable domestic or foreign anti- corruption or anti- bribery laws, which generally prohibit companies from engaging in bribery or other prohibited payments to foreign officials for the purpose of obtaining or retaining business and requires companies to maintain accurate books and records and internal controls, including at foreign- controlled subsidiaries. Compliance with these anti- corruption laws and anti- bribery laws may be expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, these laws present particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and physicians and other hospital employees are considered to be foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to governmental officials and have led to FCPA enforcement actions. We can make no assurance that our employees or other agents will not engage in prohibited conduct under our policies and procedures and anti- corruption laws and anti- bribery laws such as FCPA for which we might be held responsible. If our employees or other agents are found to have engaged in such practices, we could suffer severe penalties and other consequences that may have a material adverse effect on our business, financial condition and results of operations. We depend on our license agreement with Alnylam for the commercialization of ONPATTRO ™ (Patisiran). In 2012, we entered into a license agreement with Alnylam that entitles Alnylam to develop and commercialize products with our LNP technology. Alnylam received FDA approval in August 2018 and launched ONPATTRO immediately upon approval. We are entitled to low to mid- single- digit royalty payments escalating based on sales performance and received our first royalty payment in the fourth quarter of 2018. In July 2019, we sold this royalty entitlement to OMERS, the defined benefit pension plan for municipal employees based in the Province of Ontario, Canada, effective as of January 1, 2019, for $ 20 million in gross proceeds before advisory fees. OMERS will retain this royalty entitlement until it has received $ 30 million in royalties, at which point 100 % of this royalty entitlement on future global net sales of ONPATTRO will revert to us. From the inception of the royalty sale through December 31, ~~2023~~ **2024** , an aggregate of $ ~~22~~ **25** . ~~7~~ **0** million of royalties have been collected by OMERS. The possibility and timing of any possible reversion of the royalty entitlement is affected by many factors including: • Alnylam' s and its distributors' and sublicensees' ability **and actions** to effectively market and sell ONPATTRO in each country where sold; • the manner of sale, whether directly by Alnylam or by sublicensees or distributors, and the terms of sublicensing and distribution agreements; • the amount and timing of sales of Alnylam in each country; • regulatory approvals, appropriate labeling, and desirable pricing, insurance coverage and reimbursement; • competition **, including from Alnylam' s next generation RNAi product AMVUTTRA ® (vutrisiran)** ; and • commencement of marketing in additional countries **. ONPATTRO sales have declined each of the last two years due primarily to sales from Alnylam' s next generation RNAi product AMVUTTRA cannibalizing sales of ONPATTRO** . If Alnylam' s ~~commercialization~~ **sales** of ONPATTRO ~~does not~~ continue to **decline** ~~be successful~~ , the royalty entitlement may never revert back to us. We expect that we will depend in part on our licensing agreements with Alnylam and Qilu to provide revenue to partially fund our operations, especially in the near term. Furthermore, our strategy is to enter into various additional arrangements with corporate and academic collaborators, licensors, licensees and others for the ~~research,~~ development, clinical testing, manufacturing, marketing and commercialization of our product candidates or other products based upon our technology. We may be unable to continue to establish such licensing agreements, and any licensing agreements we do establish may be unsuccessful, or we may not receive milestone payments or royalties as anticipated. Should any licensing partner fail to develop or ultimately successfully commercialize any of the product candidates or technology to which it has obtained rights, our business may be adversely affected. In addition, once initiated, there can be no assurance that any of these licensing agreements will be continued or result in successfully commercialized products. Failure of a licensing partner to continue funding any particular program could delay or halt the development or commercialization of any products arising out of such program. In addition, there can be no assurance that the licensing partners will not pursue alternative technologies or develop alternative products either on their own or in collaboration with others, including our competitors. We ~~will~~ depend on Qilu for the development and commercialization of imdusiran in China, Hong Kong, Macau and Taiwan. In December 2021, we entered into the License Agreement with Qilu, pursuant to which we granted Qilu an exclusive (except as to certain retained rights), sublicensable, royalty- bearing license, under certain intellectual property owned by us, to develop, manufacture and commercialize imdusiran in ~~the Territory~~ **Greater China and Taiwan** . The timing and amount of any milestone and royalty payments we may receive under the License Agreement will depend, in part, on the efforts of Qilu. We ~~will~~ depend on Qilu to comply with all applicable laws relative to the development and commercialization of imdusiran in ~~the Territory~~ **Greater China and Taiwan** . Under the License Agreement, Qilu is required to use commercially reasonable efforts to develop, seek regulatory approval for, and commercialize at least one imdusiran product candidate in ~~the Territory~~ **Greater China and Taiwan** . Any failure by Qilu to use such commercially reasonable efforts could have a material adverse impact on financial results and operations. Additionally, if Qilu were to violate, or was alleged to have violated, any laws or regulations during the performance of its obligations to us, we could suffer financial and reputational harm or other negative outcomes. Any termination, breach or expiration of the License Agreement could also have a material adverse impact on our business by reducing or eliminating the potential for us to receive milestone and royalty payments. If that were to occur, we may be required to devote additional time, costs and attention to pursue the manufacture, development and commercialization of imdusiran in ~~the Territory~~ **Greater China and Taiwan** . In certain situations, Qilu has the ability to terminate the License Agreement and retain all rights to manufacture, develop and commercialize imdusiran in ~~the Territory~~ **Greater China and Taiwan** with no obligation to make any additional milestone or royalty payments to us. Conflicts may arise with our collaboration or licensing partners, including Alnylam ~~,~~ **and** Qilu, ~~Assembly and Barinthus~~ if they pursue alternative therapies for the diseases that we have targeted or develop **or prioritize** alternative products either on their own or in collaboration with others. Competing products, either developed by our present collaboration or licensing partners or any future partners or to which our present partners or any future partners have rights, may result in development delays or the withdrawal of their support for one or more of our product candidates. Additionally, conflicts may arise if there is a dispute about the progress of, or other activities related to, the clinical

development of a product candidate, the achievement and payment of a milestone amount, the payment of royalties or the ownership of intellectual property that is developed during the course of the collaborative arrangement. Similarly, the parties to a licensing agreement may disagree as to which party owns newly developed products. If an agreement is terminated as a result of a dispute and before we have realized the benefits of the collaboration or licensing arrangement, our reputation could be harmed, and we might not obtain revenues that we anticipated receiving. We rely on third parties to conduct our clinical trials, and if they fail to fulfill their obligations, perform services in a satisfactory manner, and / or comply with applicable legal or regulatory requirements, our development plans may be adversely affected. We rely on independent clinical investigators, CROs and other third- party service providers to assist us in managing, monitoring and otherwise carrying out our clinical trials. We have contracted with, and we plan to continue to contract with, certain third parties to provide certain services, including site selection, enrollment, monitoring and data management. Although we depend heavily on these parties and have contractual agreements governing their activities, we do not control them and therefore, we cannot be assured that these third parties will adequately perform all of their contractual obligations to us. If our third- party service providers cannot adequately fulfill their obligations to us on a timely and satisfactory basis or if the quality or accuracy of our clinical trial data is compromised due to failure to adhere to our protocols or regulatory requirements **or otherwise** , or if such third parties otherwise fail to meet deadlines or follow legal or regulatory requirements, our development plans may be delayed or terminated. If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative third parties on commercially reasonable terms or at all. Switching or adding additional third- party service providers involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new third- party service provider begins work. As a result, delays may occur, which can materially impact our ability to meet our desired development timelines. We rely exclusively on third parties to formulate and manufacture our product candidates, which exposes us to a number of risks that may delay development, regulatory approval and commercialization of our products or result in higher product costs. We have limited experience in drug formulation or manufacturing, and we lack the resources and expertise to formulate or manufacture our own product candidates internally. Therefore, we rely on, and expect to continue to rely on, third- party expertise to support us in this area. We have entered into contracts with third- party manufacturers to manufacture, supply, store and distribute supplies of our product candidates for our clinical trials. If any of our product candidates receive ~~FDA~~ approval, we expect to rely on third- party contractors to manufacture our products. We have no current plans to build internal manufacturing capacity for any product candidate, and we have no long- term supply arrangements. Our reliance on third- party manufacturers exposes us to potential risks, such as the following: • we may be unable to contract with third- party manufacturers on acceptable terms, or at all, because the number of potential manufacturers is limited. Potential manufacturers of any product candidate that is approved will be subject to ~~FDA~~ **regulatory** compliance inspections and any new manufacturer would have to be qualified to produce our products; • our third- party manufacturers might be unable to formulate and manufacture our product candidates and products in the volume and of the quality required to meet our clinical and commercial needs, if any; • our third- party manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials through completion or to successfully produce, store and distribute our commercial products, if approved; • drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA and other government agencies to ensure compliance with cGMP and other government regulations and corresponding foreign standards. We do not have control over third- party manufacturers' compliance with these regulations and standards, but we may ultimately be responsible for any of their failures; • if any third- party manufacturer makes improvements in the manufacturing process for our product candidates, we may not own, or may have to share, the intellectual property rights to such improvements; and • a third- party manufacturer may gain knowledge from working with us that could be used to supply one of our competitors with a product that competes with ours. Each of these risks could delay or have other adverse impacts on our clinical trials and the approval and commercialization of our product candidates, potentially resulting in higher costs, reduced revenues or both. Other companies or organizations may assert patent rights that prevent us from developing or commercializing our products. RNAi ~~, capsid~~ **and PD- L1** inhibitors ~~and RNA destabilizer, as well as our other novel HBV assets,~~ have generated many different patent applications from organizations and individuals seeking to obtain patents in the field. These applications claim many different methods, compositions and processes relating to the discovery, development and commercialization of these therapeutic products. It is likely that there could be litigation and other proceedings, such as inter partes review and opposition proceedings in various patent offices, relating to patent rights in RNAi ~~, capsid~~ **and PD- L1** inhibitors ~~, RNA destabilizer and other small molecule compounds~~ targeted at HBV. We are aware of patents and patent applications owned by third parties that may in the future be alleged by such third parties to cover the use of one or more of our products. We may need to acquire or obtain a license from such third parties to any such issued patents to market or sell any such products, which may not be available on commercially acceptable terms or at all. If such third parties obtain valid and enforceable patents and successfully prove infringement of an approved ~~Arbutus~~ product **of ours** , and we are not able to acquire such issued patents or negotiate a license on acceptable terms, and if such approved ~~Arbutus~~ product is determined to infringe any such issued patents, then we may be forced to pay royalties, damages and costs, or we may be prevented from commercializing such approved ~~Arbutus~~ product altogether, which could have a material adverse impact on our business. Certain United States, Canadian and international patents and patent applications we own involve complex legal and factual questions for which important legal principles are largely unresolved. For example, no consistent policy has emerged for the breadth of biotechnology patent claims that are granted by the USPTO or enforced by the United States federal courts. In addition, the coverage claimed in a patent application can be significantly reduced before a patent is issued. Also, we face at least the following intellectual property risks: • some or all patent applications may not result in the issuance of a patent; • patents issued to us may not provide us with any competitive advantages; • patents could be challenged by third parties; • competitors may find ways to design around our patents; and • competitors could independently develop products which

duplicate our products. A number of industry competitors and institutions have developed technologies, filed patent applications or received patents on various technologies that may be related to or affect our business. Some of these technologies, applications or patents may conflict with our technologies or patent applications. Such conflict could limit the scope of the patents, if any, that we may be able to obtain or result in the denial of our patent applications. In addition, we could incur substantial costs in filing suits against others to have such patents declared invalid. As publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain we **were** or any licensor was the first creator of inventions covered by pending patent applications or that we **were** or such licensor was the first to file patent applications for such inventions. Any future proceedings could result in substantial costs, even if the eventual outcomes are favorable. There can be no assurance that our patents, if issued, will be held valid or enforceable by a court or that a competitor' s technology or product would be found to infringe such patents. **For example, in April 2023, following the institution of inter partes review of a patent in our LNP patent portfolio, such patent was found to be invalid. For more information on past and ongoing intellectual property challenges and litigation, see " Item 3 — Legal Proceedings. "** There has been significant litigation in the biotechnology industry over contractual obligations, patents and other proprietary rights, and we may become involved in various types of litigation that arise from time to time. Involvement in litigation could consume a substantial portion of our resources, regardless of the outcome of the litigation. Counterparties in litigation may be better able to sustain the costs of litigation because they have substantially greater resources. If claims against us are successful, in addition to any potential liability for damages, we could be required to obtain a license, grant cross- licenses, and pay substantial milestones or royalties in order to continue to develop, manufacture or market the affected products. Involvement and continuation of involvement in litigation may result in significant and unsustainable expense, and divert management' s attention from ongoing business concerns and interfere with our normal operations. Litigation is also inherently uncertain with respect to the time and expenses associated therewith, and involves risks and uncertainties in the litigation process itself, such as discovery of new evidence or acceptance of unanticipated or novel legal theories, changes in interpretation of the law due to decisions in other cases, the inherent difficulty in predicting the decisions of judges and juries and the possibility of appeals. Ultimately **,** we could be prevented from commercializing a product or be forced to cease some aspect of our business operations as a result of claims of patent infringement or violation of other intellectual property rights and the costs associated with litigation, which could have a material adverse effect on our business, financial condition, and operating results and could cause the market value of our common shares to decline. **Additionally, we continue to protect and defend our intellectual property rights, certain of which are the subject of ongoing lawsuits against Moderna and Pfizer / BioNTech for their use of our patented LNP technology in their COVID- 19 mRNA- LNP vaccines. These lawsuits consume significant resources. Should we not be successful in one or more of these lawsuits, it could have a material adverse effect on our business, financial condition, and operating results and could cause the market value of our common shares to decline. For more information on past and ongoing intellectual property challenges and litigation, see " Item 3 — Legal Proceedings. "** Much of our know- how and technology may constitute trade secrets. There can be no assurance, however, that we will be able to meaningfully protect our trade secrets. In order to protect our proprietary technology and processes, we rely in part on confidentiality agreements with our collaborators, employees, vendors, consultants, outside scientific collaborators and sponsored researchers, and other advisors. These agreements offer only limited protection, and as such may not effectively prevent disclosure of confidential information and also may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover trade secrets and proprietary information, and in such cases **,** we could not assert any trade secret rights against such party. Costly and time consuming litigation could continue to be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position. As of March ~~1~~ **25** , ~~2024~~ **2025** , executive officers, directors, five percent or greater shareholders, and their respective affiliated entities beneficially owned, in the aggregate, approximately ~~41~~ **44** % of our outstanding common shares. Entities associated with Roivant Sciences Ltd. (Roivant) collectively held as a group approximately ~~22~~ **20** % of our outstanding common shares as of March ~~1~~ **25** , ~~2024~~ **2025** . As a result, Roivant can significantly influence the outcome of matters requiring shareholder approval, including the election of directors, amendments of our organizational documents, or approval of any merger, sale of assets or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common shares that you may feel are in your best interest. The interests of Roivant may not always coincide with your interests or the interests of other shareholders and they may act in a manner that advances their best interests and not necessarily those of other shareholders, including seeking a premium value for their common shares. These actions might affect the prevailing market price for our common shares. In addition, Roivant and certain of our other principal shareholders that have held their shares for several years may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other shareholders. Such concentration of ownership control may also: • delay, defer or prevent a change in control; • entrench our management and / or ~~the~~ **our** ~~board~~ **Board** ~~of directors~~ ; or • impede a merger, consolidation, takeover or other business combination involving us that other shareholders may desire. We are incorporated under the laws of the Province of British Columbia and some of our assets are located outside the United States. While we have appointed National Registered Agents, Inc. as our agent for service of process to effect service of process within the United States upon us, it may not be possible for you to enforce against us or our insiders in the United States, judgments obtained in United States courts based upon the civil liability provisions of the United States federal securities laws or other laws of the United States. In addition, there is doubt as to whether original action could be brought in Canada against us or our directors or officers based solely upon United States federal or state securities laws and as to the enforceability in Canadian courts of judgments of United States courts obtained in actions based upon the civil liability provisions of United States federal or state securities laws. Conversely, all of our directors and officers reside outside Canada, and the majority of our physical assets are also located outside Canada. While we have appointed Farris LLP as our agent for

service of process in Canada, it may not be possible for you to enforce in Canada against our assets or those directors and officers residing outside Canada, judgments obtained in Canadian courts based upon the civil liability provisions of the Canadian securities laws or other laws of Canada. We generally will be a " passive foreign investment company " under the meaning of Section 1297 of the Code (a PFIC) if (a) 75 % or more of our gross income is " passive income " (generally, dividends, interest, rents, royalties, and gains from the disposition of assets producing passive income) in any taxable year, or (b) if at least 50 % or more of the quarterly average value of our assets produce, or are held for the production of, passive income in any taxable year. We have determined that we have not been a PFIC for the three taxable years ended December 31, ~~2023~~ **2024** , however recent changes to Treasury regulations under the Code have made this determination more challenging for us, and we cannot provide any assurances that we will not become a PFIC in the future. If we are a PFIC for any taxable year during which a United States person holds our common shares, it would likely result in materially adverse United States federal income tax consequences for such United States person, including, but not limited to, any gain from the sale of our common shares would be taxed as ordinary income, as opposed to capital gain, and such gain and certain distributions on our common shares would be subject to an interest charge, except in certain circumstances. It may be possible for United States persons to fully or partially mitigate such tax consequences by making a " qualifying electing fund election, " as defined in the Code (a QEF Election), but although we have provided this information in the past, there is no requirement that we do so. Our preferred shares are available for issuance from time to time at the discretion of our ~~board~~ **Board** ~~of directors~~ , without shareholder approval. Our articles allow our ~~board~~ **Board** , without shareholder approval, to determine the special rights to be attached to our preferred shares, and such rights may be superior to those of our common shares. In addition, limitations on the ability to acquire and hold our common shares may be imposed by the Competition Act in Canada. This legislation permits the Commissioner of Competition of Canada to review any acquisition of a significant interest in us. This legislation grants the Commissioner jurisdiction to challenge such an acquisition before the Canadian Competition Tribunal if the Commissioner believes that it would, or would be likely to, result in a substantial lessening or prevention of competition in any market in Canada. The Investment Canada Act subjects an acquisition of control of a Canadian- company by a non- Canadian to government review if the value of our assets, as calculated pursuant to the legislation, exceeds a threshold amount. A reviewable acquisition may not proceed unless the relevant minister is satisfied that the investment is likely to result in a net benefit to Canada. Any of the foregoing could prevent or delay a change of control and may deprive or limit strategic opportunities for our shareholders to sell their shares. ~~We depend upon~~ **In the first quarter of 2025, we announced the appointment of five new members of** our ~~senior executive officers~~ **Board to replace all of the former directors,** as well as ~~key scientific, management and other~~ -- **the appointment** ~~personnel. The competition for qualified personnel in the biotechnology field is intense. We rely heavily on our ability to attract and retain qualified managerial, scientific and technical staff. The loss~~ of **a new** ~~the service of any of the members of our senior management, including Michael J. McElhaugh, our interim~~ President ~~and~~ **,** Chief Executive Officer ~~,~~ and **Chairperson of** ~~Michael J. Sofia,~~ our **Board and a new** Chief ~~Scientific~~ **Financial** Officer **. Additionally** , **our Board took action to reduce our workforce by 57 % resulting in a total workforce after reductions of 19 employees. Our Board also decided to exit our corporate headquarters in Warminster, PA and to discontinue in- house scientific research. Our new Board and management team are reviewing our pipeline and development plans for our hepatitis B programs. Our new management team and Board** may ~~adversely affect~~ **make further adjustments and reassess** our ~~ability to~~ **short and long- term business portfolio and** ~~develop~~ **development** ~~our technology, add~~ **strategies. These potential changes could lead** to **shifts in** our ~~pipeline~~ **company' s strategic direction** , **which may impact** ~~advance our product candidates and manage~~ our operations ~~. We do not carry key person life insurance on any of our employees. We rely on consultants and advisors~~ , **financial condition** ~~including scientific and clinical advisors~~ , ~~to assist us in formulating our research~~ and **overall business performance** ~~development and commercialization strategy. Our consultants and advisors may be employed by other entities and may have commitments under consulting or advisory contracts with those entities that may limit their availability to us. If we are unable to continue to attract and retain highly qualified personnel, our ability to develop and commercialize our product candidates will be limited~~ . We could face liability from our controlled use of hazardous and radioactive materials in our ~~research and~~ development processes. We use certain radioactive materials, biological materials and chemicals, including organic solvents, acids and gases stored under pressure, in our ~~research and~~ development activities. Our use of radioactive materials is regulated by the United States Nuclear Regulatory Commission and Pennsylvania Department of Environmental Protection for the possession, transfer, import, export, use, storage, handling and disposal of radioactive materials. Our use of biological materials and chemicals, including the use, manufacture, storage, handling and disposal of such materials and certain waste products is regulated by a number of federal, state and local laws and regulations. Although we believe that our safety procedures for handling such materials comply with the standards prescribed by such laws and regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result or penalized with fines, and any such liability could exceed our resources. We are not specifically insured with respect to this liability. Our business, reputation, and operations could suffer in the event of information technology system failures, such as a cybersecurity ~~breach~~ **incident** . We are increasingly dependent on sophisticated software applications and computing infrastructure to conduct critical operations. We depend on both our own systems, networks, and technology as well as the systems, networks and technology of our contractors, consultants, vendors and other business partners. Disruption, degradation, or manipulation of systems, networks or technology through intentional or accidental means could materially adversely impact key business processes. Despite the implementation of security measures, our systems, networks and technology and those of our contractors and consultants are vulnerable to damage **or interruption** from **events including** computer viruses **, cyberattacks** (including ransomware ~~)~~ , **malware attacks,** ~~cybersecurity breaches and other forms of~~ unauthorized access **attempts, and denial of service and other unintentional intrusions or malicious cyberattacks), social engineering (including phishing) or other fraudulent schemes, and other cybersecurity incidents** , as well as natural disasters, terrorism,

war, telecommunication and electrical failures **. These threats may arise from** ~~, cyberattacks, phishing or other fraudulent schemes,~~ persons inside our organization, ~~or~~ **authorized** persons with access to systems inside our organization or those with whom we do business **, or unauthorized individuals** . The risk of a cyberattack or other cybersecurity incidents has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. Although to date the cybersecurity incidents we have experienced have not resulted in ~~any~~ **a** material ~~losses~~ **impact on us** , such events impacting either our own systems, networks and technology, or those of our contractors, consultants, vendors, or other business partners could threaten the confidentiality, integrity and availability of **our data or data upon which we rely, including** regulated personal information, confidential information or intellectual property. This could result in ~~the~~ **unauthorized access to, loss of, or** modification of critical data, the loss of Company funds and / or the failure or interruption of critical operations. For example, the loss of preclinical trial data or data from completed or ongoing clinical trials for our product candidates could result in delays in our regulatory filings and development efforts and significantly increase our costs. There can be no assurance that our efforts to protect data and systems will prevent service interruption or the loss of critical or sensitive information from our or third **-** party providers' ~~databases or~~ systems **, networks and technologies. The cost and operational consequences of responding to cybersecurity incidents, including disruption, degradation, or manipulation of systems, networks or technology, or implementing remediation measures could be significant** . Additionally, while we have implemented security measures that we believe are appropriate and continue to enhance cybersecurity protections, a regulator could deem our security measures not to be appropriate given the lack of prescriptive measures in certain data protection laws. **Increased regulation of data collection, use and retention practices, including self- regulation and industry standards, changes in existing laws and regulations, enactment of new laws and regulations, increased enforcement activity, and changes in interpretation of laws, could increase our cost of compliance and operation, limit our ability to grow our business or otherwise harm our business.** To the extent that any disruption or cybersecurity incident results or appears to result in such interruption or loss, we could incur material financial, legal, business or reputational harm, including regulatory fines, penalties **, scrutiny,** or intervention, or claims by third parties **, including** that we have breached privacy- or confidentiality- related obligations. **A significant cybersecurity incident may also deter new clinical trial participants from participating in our trials.** Furthermore, **if our systems, networks, and technology, or those of third parties on which we rely, suffer severe damage, disruption or shutdown and our business continuity plans do not effectively resolve the issues in a timely manner, we could experience delays in reporting our financial results and** the development of our product candidates could be delayed **. Moreover** , ~~and~~ our insurance may not provide any or adequate coverage of any such losses **. And, as cyberattacks increase in frequency and magnitude, we may be unable to obtain insurance in amounts and on terms we view as adequate for our operations** . We may acquire other assets or businesses, or form strategic alliances or collaborations or make investments in other companies or technologies that could harm our financial condition, results of operations or cash flows, dilute our shareholders' ownership, incur debt or cause us to incur significant expense. As part of our business strategy, we may pursue acquisitions of assets or businesses, or strategic alliances or collaborations, to expand our existing technologies and operations. We may not identify or complete these transactions in a timely manner, on a cost- effective basis, or at all, and we may not realize the anticipated benefits of any such transaction, any of which could have a detrimental effect on our financial condition, results of operations or cash flows. We may not be able to find suitable acquisition candidates, and if we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business and we may incur debt or assume unknown or contingent liabilities in connection therewith. Integration of an acquired company or assets may also disrupt ongoing operations, require the hiring of additional personnel and the implementation of additional internal systems and infrastructure, especially the acquisition of commercial assets, and require management resources that would otherwise focus on developing our existing business. We may not be able to find suitable collaboration partners or identify other investment opportunities, and we may experience losses related to any such investments. To finance any acquisitions or collaborations, we may choose to issue debt or equity securities as consideration. Any such issuance of shares would dilute the ownership of our shareholders. If the price of our common shares is low or volatile, we may not be able to acquire other assets or businesses or fund a transaction using our equity securities as consideration. Alternatively, it may be necessary for us to raise additional capital for acquisitions through public or private financings. Additional capital may not be available on terms that are favorable to us, or at all.